ORDER NO. CPD0111006C1

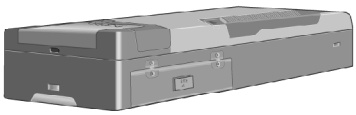
Service Manual

Personal Computer

CF-07

TOUGHBOOK

This is the Service Manual for the following areas.
M...for U.S.A.



Model Number Reference

The following models are numbered in accordance with the types of CPU and HDD etc. featured by product.

Model No. CF-07*1* Z *2* ZY*3* *4*

1: CPU type
L: for Intel® Mobile Pentium® III Processor 300 MHz

2: HDD type / RAM size
5: 5GB / 128 MB

3: Operation System
E: Microsoft® Windows® 98
D: Microsoft® Windows® 2000

4: Area
M: Refer to above area table

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

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WARNINGS

For U.K.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 3 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 3 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

Important

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured RED.

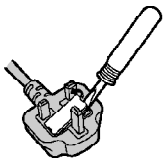
Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol .

The mains plug on this equipment must be used to disconnect the mains power.

Please ensure that a socket outlet is available near the equipment and shall be easily accessible.

■How to replace the fuse

Open the fuse compartment with a screw-driver and replace the fuse.



Warnings

- This equipment is not designed for connection to an IT power system.
  (An IT system is a system having no direct connections between live parts and Earth; the exposed-conducive-parts of the electrical installation are earthed.
  An IT system is not permitted where the computer is directly connected to public supply systems in the U.K.)
- Disconnect the mains plug from the supply socket when the computer is not in use.

This equipment is produced to BS800/1983.

LITHIUM BATTERY ⚠

• **CAUTION**
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacture.
Discard used batteries according to the manufacturer's instructions.

LITHIUMBATTERIES ⚠

Vorsicht!
Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben order einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

PILE AU LITHIUM ⚠

ATTENTION: IL Y A DANGER D'EXPLOSION S' IL Y A REMPLACEMENT INCORRECT DE LA PILE. REMPLACER UNIQUEMENT AVEC UNE PILE DU MÈME TYPE OU D'UN TYPE RECOMMANDÉ PAR LE CONSTRUCTEUR. METTRE AU RÉBUT LES PILES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.

For U.S.A. / CANADA

A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

Precautions (Battery Pack)

- Care should be exercised with regard to the following in order to avoid the possibility of overheating, fire, or damage.

Avoid Heat
Do not throw the battery pack into a fire or expose it to excessive heat.

Keep Articles Away
Do not place the battery pack together with articles such as necklaces or hairpins when carrying or storing.

Do Not Disassemble
Do not insert sharp objects into the battery pack, expose it to bumps or shocks, deform, disassemble, or modify it.

Do Not Short
Do not short the positive (+) and negative (-) contacts.

Avoid Extreme Heat, Cold and Direct Sunlight
Do not charge, use or leave the battery pack for extended periods where it will be exposed to direct sunlight, in a hot place (in an automobile on a sunny day, for example), or in a cold place.

Do Not Use With Any Other Computer
The battery pack is rechargeable and was intended for the specified computer or charger. Do not use it with a computer other than the one for which it was designed.

Do Not Put into a Microwave
Do not put the battery pack into a microwave oven or a pressurized chamber.

Stop Using
Should the battery emit an abnormal odor, become hot to the touch, become discolored, change shape, or become in any way different from normal, remove it from the computer and stop using it.

- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- Do not expose the battery pack to water, or allow it to become wet.
- If the battery pack will not be used for a long period of time (a month or more), charge or discharge (use) the battery pack until the remaining battery level becomes 30% to 40% and store it in a cool, dry place.
- This computer prevents overcharging of the battery by recharging only when the remaining power is less than approx. 95% of capacity.
- The battery pack is not charged when the computer is first purchased. Be sure to charge it before using it for the first time. When the AC adaptor is connected to the computer, charging begins automatically.
- Should the battery leak and the fluid get into your eyes, do not rub your eyes. Immediately flush your eyes with clear water and see a doctor for medical treatment as soon as possible.

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1 Specifications

Model No.		CF-07LZ5ZYEM	CF-07LZ5ZYDM
CPU		Mobile Pentium® III Processor 300 MHz	
L1 Cache Memory		32 KB	
L2 (Second) Cache Memory		256 KB	
Memory (Expandable to)		128 MB (256MB)	
Video Memory		8 MB	
External Display		256 / 65536 / 16 M colors (640 × 480 dots / 800 × 600 dots / 1024 × 768 dots)	
Hard Disk Drive		5 GB*1	
Slots	PC Card Slot	Type I or Type II	
		Allowable current	3.3 V: 400 mA, 5 V: 400 mA
	RAM Module Slot	144-pin, µ DIMM, 3.3 V, SDRAM, PC 100 Compliant	
Interface	Mini USB Port	4-pin	
	Serial Port	Dsub 9-pin female	
Battery	Battery Pack	Li-ion 7.4 V, 1.7 Ah	
		Operating Time*2	Approx. 4.0 h
		Charging Time*2	Power On: Approx. 4.0-10.0 h
			Power Off: Approx. 4.0 h
	Clock Battery	Coin type lithium battery 3.0 V	
		Operating Time	Approx. 7 years
Power Consumption*3		Approx. 13 W*4 / Approx. 30 W*5	
Software	Operating System	Microsoft® Windows® 98 Second Edition (FAT32 File System)	Microsoft® Windows® 2000 Professional Service Pack 2
	Utility Programs	Setup Utility, DMI Viewer, WirelessDisplay Setup Utility, Wireless LAN Configuration Utility	
Environment		In use: Temperature	5 °C to 35 °C {41 °F to 95 °F}
		In use: Humidity	30% to 80% RH (No condensation)
		Not in use: Temperature	-20 °C to 60 °C {-4 °F to 140 °F}
		Not in use: Humidity	30% to 90% RH (No condensation)
Physical Dimensions (W × H × D)		200 mm × 91.6 mm•× 52 mm {7.9" × 3.6" × 2.0"}	
Weight		Approx. 960 g {Approx. 2.1 lb.}	

*1 1GB = 10^9 bytes
*2 A value when two batteries are set. Varies depending on the usage conditions.
*3 Approx. 0.2 W when the battery pack is fully charged (or not being charged) and the computer is off.
*4 Rated power consumption.
*5 Maximum when recharging in the ON state.

2 Names and Functions of Parts

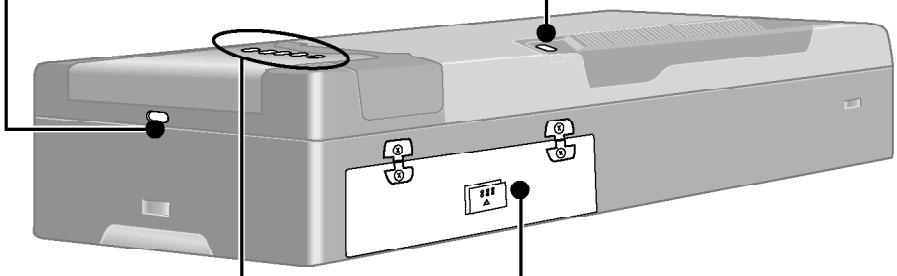
The illustrations shown may differ from the actual physical appearances.

Security Lock LOCK

A Kensington cable can be connected to prevent theft of your computer. For more information, please read the manual that comes with the cable.

Power Switch ⏻

Before using the computer for the first time, carefully read the [Limited Use License Agreement]. If you agree to the conditions, remove the seal.



Second Battery Pack Slot 2

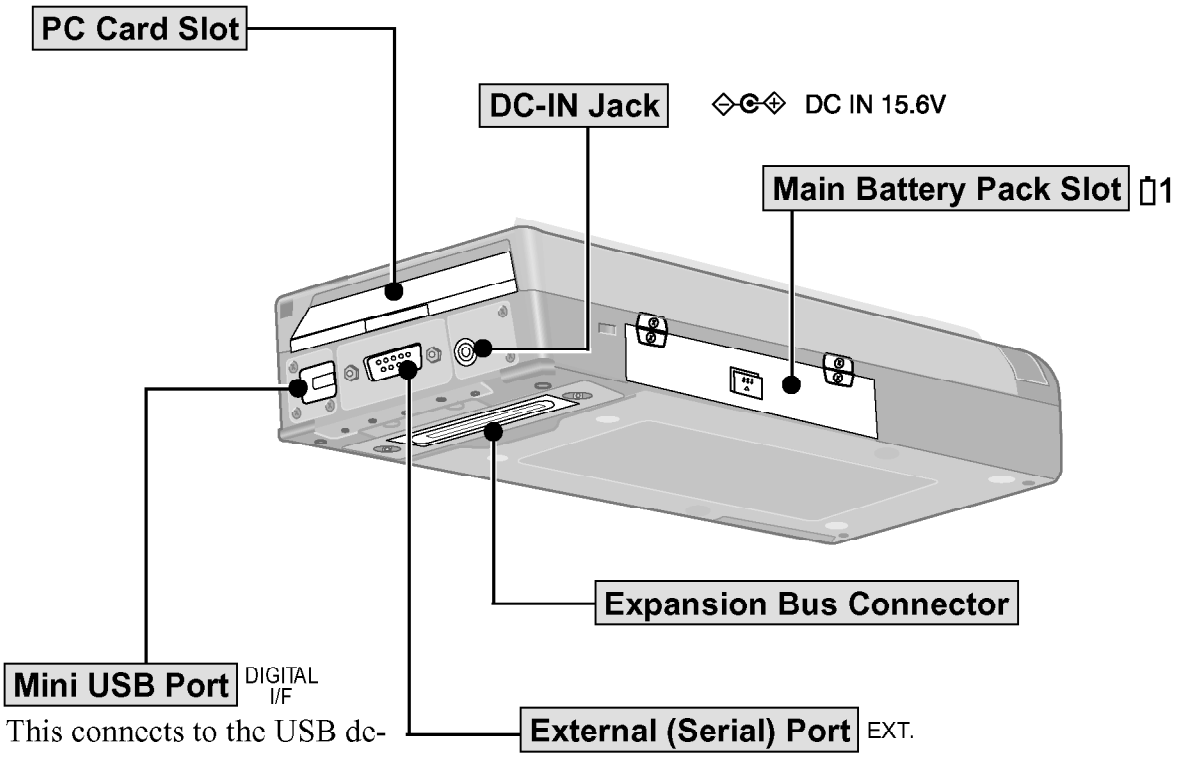
LED Indicators

- Hard disk status
- 1-2 Battery pack status
- Power status
- DISPLAY READY Wireless display status

NOTE

If a battery pack is inserted when the computer is off (under the condition there is no battery pack in the computer), LED indicators will blink five times. You can confirm the remaining battery power by looking at the LED indicators. Since the remaining battery power is displayed for one battery pack, insert battery packs one at a time for confirmation purposes. You can also confirm the remaining battery power in the same way when the computer is on after a battery pack is inserted.

LED Indicators	Remaining battery power
Non-blinking	0%
One indicator-blinking	1% ~ 20%
Two indicators-blinking	21% ~ 50%
Three indicators-blinking	51% ~ 80%
Four indicators-blinking	81% ~ 100%



This connects to the USB device with the included USB cable.

3 Starting Up/Shutting Down

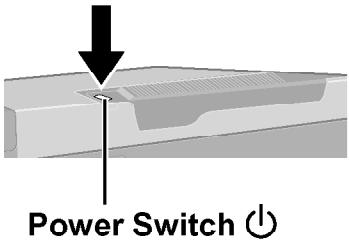
Starting Up

CAUTION

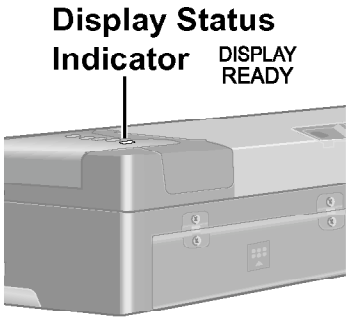
Do not maximize the MS-DOS screen. Once maximized, the connection with the wireless display is interrupted. The connection cannot be re-established and the computer no longer operates. In such cases, the computer must be powered off. Data may be lost.

1 Turn on your computer

Press the power switch and hold it for approximately one second until the power indicator turns on before releasing it.



2 After confirming the display status indicator lit, turn on the wireless display



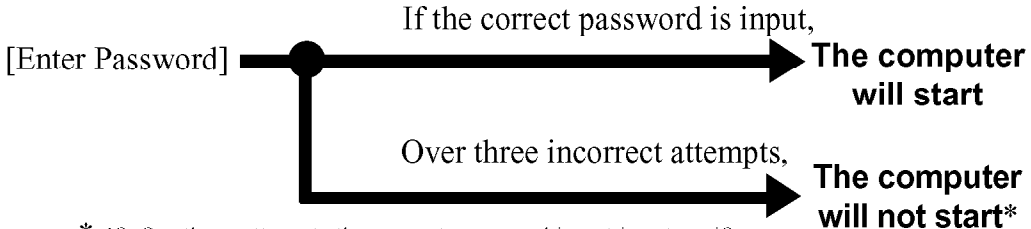
CAUTION

- After confirming that the power indicator has turned on, avoid the following until Windows has completed loading.
  - Connecting or disconnecting the AC adaptor.
  - Touching the power switch.
  - Performing any keyboard or external mouse operations.
- Once the computer is powered off, you must wait at least ten seconds before powering it on again.
- When the CPU temperature rises, the computer may not power on to prevent the CPU from overheating. Should this happen, allow the computer to cool down then switch the power on again.
  If the computer still does not power on, contact Panasonic Technical Support.

● **<Only when the port replicator (external display, external keyboard) is connected>**
If [Enter Password] is displayed,

you must first enter your password

Upon entering your password and pressing Enter


If the correct password is input,
[Enter Password]
The computer will start
Over three incorrect attempts,
The computer will not start* (power off)

* If after three attempts the correct password is not input, or if no password is entered for about a minute, the computer returns to the condition just before the attempt was made to start up the computer.

● **When an application or file that was previously displayed appears on your screen,**

the standby or hibernation mode

has been set.

3 Windows 2000

Input your password

Wait for 10 seconds after confirming that the HDD access has been completed, input the user name and password, then select [OK]. Until the correct user name and password are entered, the computer will not operate.

4 Select your application

You are able to start working on your computer.

NOTE

- The power to the wireless display may be turned off while Windows is setting up or even when an application software is being installed.
  <When the wireless display turned off>
  - If the power indicator lights, the wireless display will resume operation when the touchscreen is used.
  - If the power indicator does not light, the wireless display will resume operation when the power switch is pressed.

  <When the external display turned off>
  The external display will resume operation when the external keyboard or mouse is used.
- According to the setting of the computer, when the computer is left alone, it automatically may enter the standby*1 mode.
  The computer will resume by pressing the power switch.
- [System devices] in [Start] - [Settings] - [Control Panel] - [System]*2 - [Device Manager] may contain a device or devices bearing an exclamation mark or question mark. This does not indicate a malfunction. Such a mark (exclamation mark or question mark) will not be displayed if the operating environment of the device showing the mark is corrected, by for instance installing the driver of the device.

*1 Windows 2000 : standby or hibernation
*2 Windows 2000 : [System] - [Hardware]

Shutting Down (power off your computer)

This procedure is shutting down without using the standby or hibernation function.

1 Display the shut down screen

After saving important data and closing each application, select [Shut Down] from the [Start] menu.

NOTE

From the keyboard,

You may select to press or Ctrl + Esc , then select the menu with ↑ or ↓.

2 Confirm shut down

Select [OK] after selecting [Shut down].

● Restarting your computer (without shutting down)

Select [OK] after selecting [Restart].

CAUTION

Windows 98

Do not select [Start] - [Shut down] - [Restart in MS-DOS mode].
If this occurs, the wireless display no longer displays. In such cases, turn off the computer and turn on the computer again.

3 When [Windows is shutting down] is displayed, select [OK]

The wireless display and your computer will power off automatically.
Confirm the power indicator of the computer turns off.

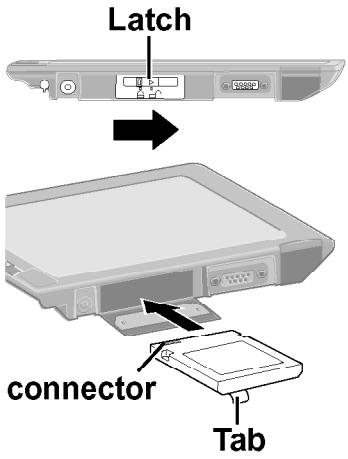
NOTE

To quickly resume computer operation after shutting down,

The standby or hibernation function is available.

4 Setup the wireless display

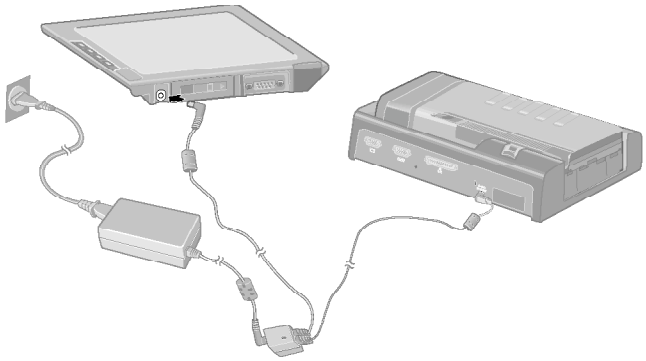
① Slide the latch to the right, and open the cover, then insert the battery pack in the wireless display. After inserting the battery pack, close the cover, then slide the latch to the left.

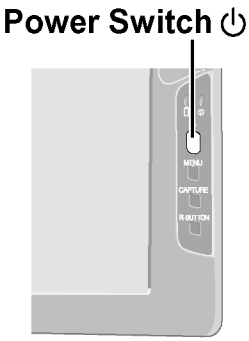


CAUTION

Be sure to insert the battery pack as illustrated.

② Connect the wireless display to a power outlet and turn on the wireless display.





NOTE

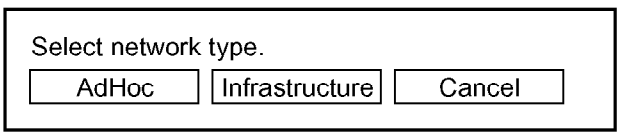
<During the setup procedure after reinstalling only>

Press the Menu button on the wireless display, then select [Option] , and then select [Setup].

When [Do you want to change wireless setting?] is displayed, select [Yes].

The following screen is displayed.

<Wireless display screen>



③ Select [AdHoc].
The following screen is displayed.

<Wireless display screen>

Change setting on host PC to the following value, reboot the host PC, then select "Connect" below.

Wireless LAN card
Network Type : AdHoc
SSID : cfvdw07-43411
Encryption : disable
TCP/IP
IP Address : 10.57.148.205
NetMask : 255.0.0.0
MeiWDS
Password : wdsp

Connect Cancel

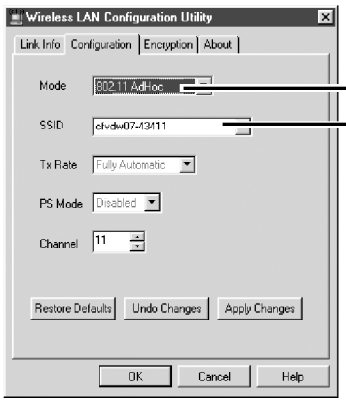
This screen is a sample.

CAUTION

Do not select [Connect] until step ⑩ is completed.

④ Select on the taskbar of the external display, then select [Configuration].
The following screen is displayed.

<External display screen>



This screen is a sample.

Select [802.11.AdHoc].

CAUTION

Do not select [AdHoc].

Match the settings of the computer with the information displayed on <Wireless display screen> of the step ③.

CAUTION

<For Canada>
You can select only [11] for [Channel].

NOTE

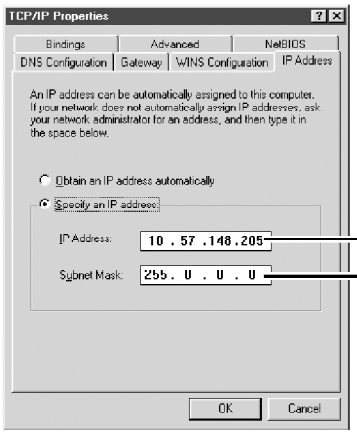
If there is no input from a key or an external mouse for a certain interval of time, the power to the wireless display may be turned off automatically. In this case, turn on the wireless display and then start the procedure from step ③.

⑤ Select [Apply Changes], then select [OK].

⑥ **Windows 98**

Select [Start] - [Settings] - [Control Panel] - [Network] - [TCP/IP→PRISM2 IEEE 802.11 PC CARD Adapter] - [Properties] - [IP Address].
The following screen is displayed.

<External display screen>


TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.
Obtain an IP address automatically
Specify an IP address:
IP Address:
10 . 57 .148 .205
Subnet Mask:
255 . 0 . 0 . 0
OK
Cancel

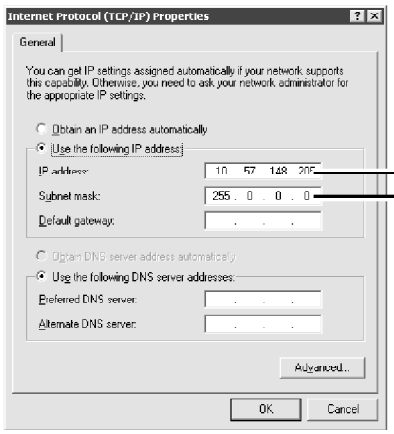
Add the check mark for [Specify an IP address], match the settings of the computer with the information displayed on <Wireless display screen> of the step ③.

This screen is a sample.

Windows 2000

Select [Start] - [Settings] - [Control Panel] - [Network and Dial-up Connections] -[Local Area Connection 2] - [Properties] -[Internet Protocol (TCP/IP)] - [Properties].
The following screen is displayed.

<External display screen>


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
255 . 0 . 0 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Add the check mark for [Use the following IP address], match the settings of the computer with the information displayed on <Wireless display screen> of the step ③.

This screen is a sample.

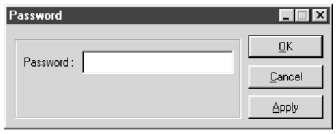
⑦ Select [OK], then select [OK].

⑧ **Windows 98**

Select [Yes]. The computer will restart.

⑨ Select on the taskbar, select [Password]:
The following screen is displayed.

<External display screen>



⑩ Input [wdsp], then select [OK].

⑪ Select [Connect] on <Wireless display screen> of the step ③.
The wireless display can be used.

NOTE

Do not remove the port replicator until step ⑮ is completed.

⑫ Windows 98
Power off your computer.

⑬ Windows 98
Remove the external mouse, then turn on your computer again.

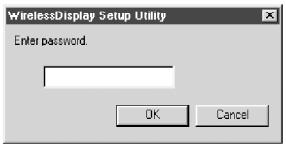
⑭ Windows 98
When [Windows did not detect a mouse attached to the computer] is displayed, add the check mark for [Do not show this message in the future] through the external keyboard. (Press Alt + D , press Tab ,then press Enter .)

⑮ Windows 98
Power off your computer through the keyboard.

<When using except default settings with the wireless display>

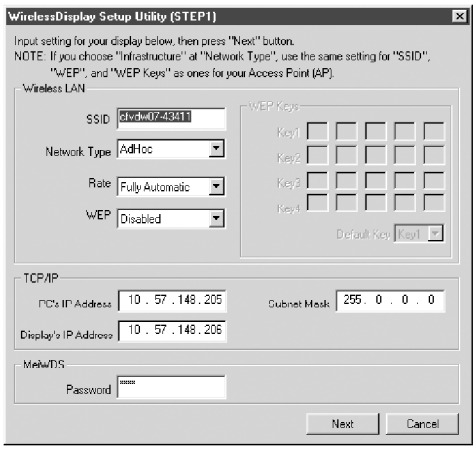
⑯ Select on the taskbar, select [Run Setup Utility].
The following screen is displayed.

<External display screen>



⑰ Input [wdsp], then select [OK].
The following screen is displayed.

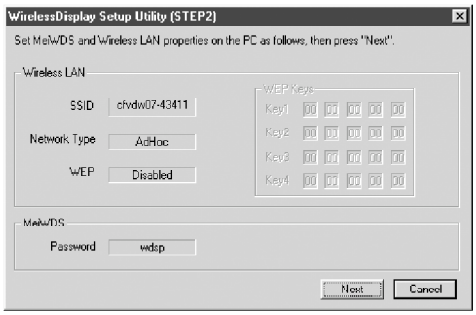
<Step 1>



This screen is a sample.

⑱ Set the necessary items, select [Next].
The following screen is displayed.

<Step 2>



This screen is a sample.

⑲ Select on the taskbar, set the parameters in [Configuration] or [Encryption].

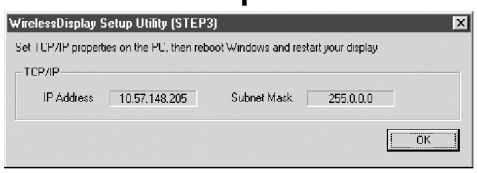
NOTE

After this, if [Connection Timeout] is displayed, select [OK].

⑳ Select on the taskbar, select [Password].
Set the password by following **<Step 2>** screen.

㉑ Select [Next] at the **<Step 2>** screen.
The following screen is displayed.

<Step 3>



This screen is a sample.

㉒ Windows 98

Select [Start] - [Settings] - [Control Panel] - [Network] - [TCP/IP→PRISM2 IEEE 802.11 PC CARD Adapter] - [Properties] - [IP Address], set the parameters by following the above **<Step 3>** screen, then select [OK].

Windows 2000

Select [Start] - [Settings] - [Control Panel] - [Network and Dial-up Connections] -[Local Area Connection 2] - [Properties] -[Internet Protocol (TCP/IP)] - [Properties], set the parameters by following the above **<Step 3>** screen, then select [OK].

㉓ Restart the computer.

NOTE

Windows 98

Be sure to prepare the following.

- Optional port replicator (CF-VEB071)
- External keyboard
- External display

When using the files in the following folders available on the retail version of the Windows CD-ROM, it is necessary to run a separate file decompression program.

\tsclient
\tools

To uncompress the file, it is necessary to have approximately 80 MB of free disk space available on the hard disk.

To use the CD-ROM drive in MS-DOS mode, perform the operation below after modifying config.sys and autoexec.bat.

File decompression method:

① Turn on your computer.
② When [Press <F2> to enter SETUP] is displayed, immediately press Ctrl (until the menu is displayed).
③ Select [Command prompt only].
④ Insert the Product Recovery CD-ROM.
⑤ At the prompt, input the following:
L:\en\addfile Enter

Follow the message on the screen.

After this program is executed, the contents of the above folders will be decompressed to the c:\util\win98add folder.

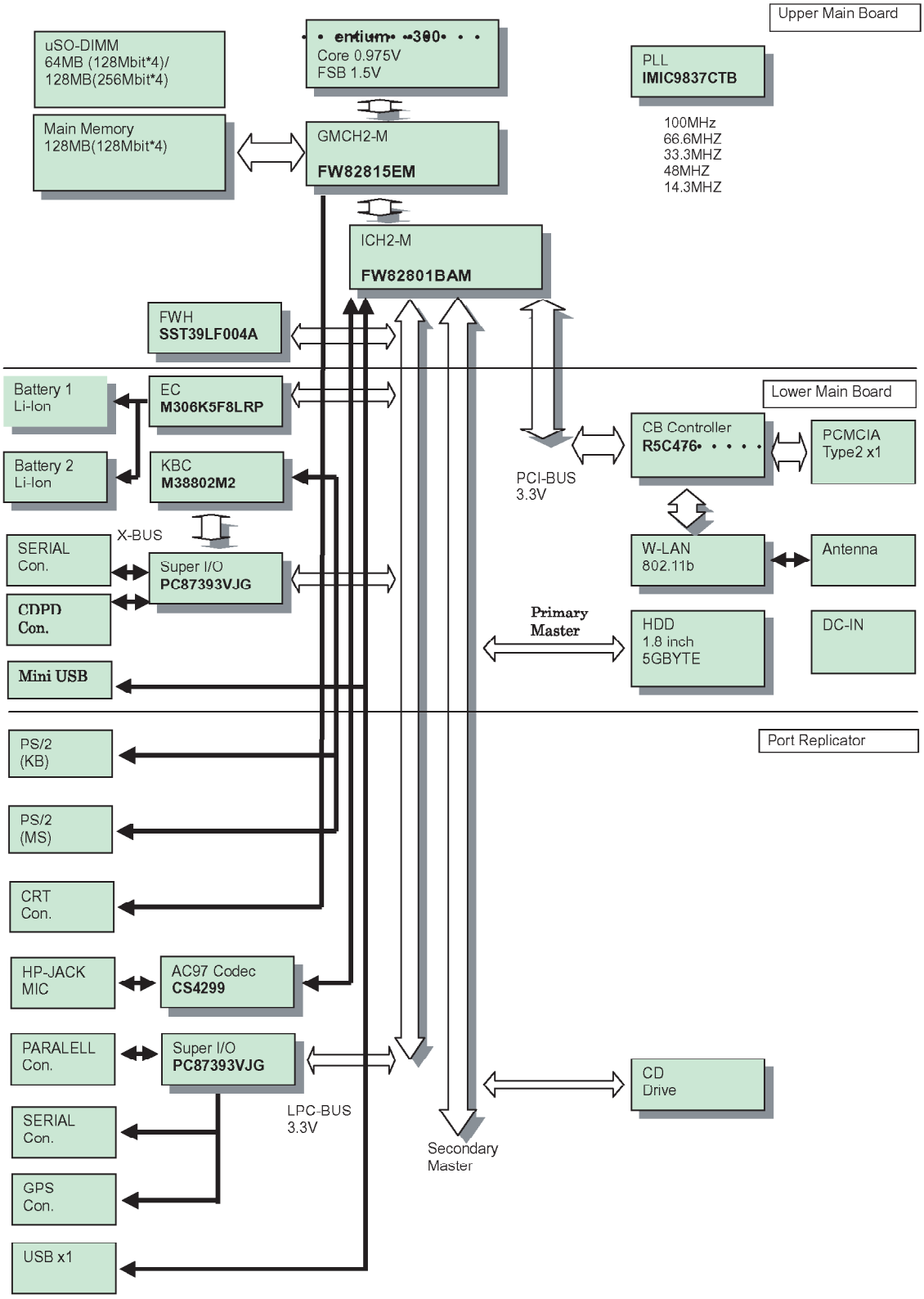
Windows 2000

When a new device has been installed or a new Windows Component has been added in [Start] - [Settings] - [Control Panel] - [Add/Remove Programs], [Insert Disk] may appear. Select [OK] and specify [c:\winnt\cdimage] in place of [c:\sysprep\i386] or [D:], then select [OK].

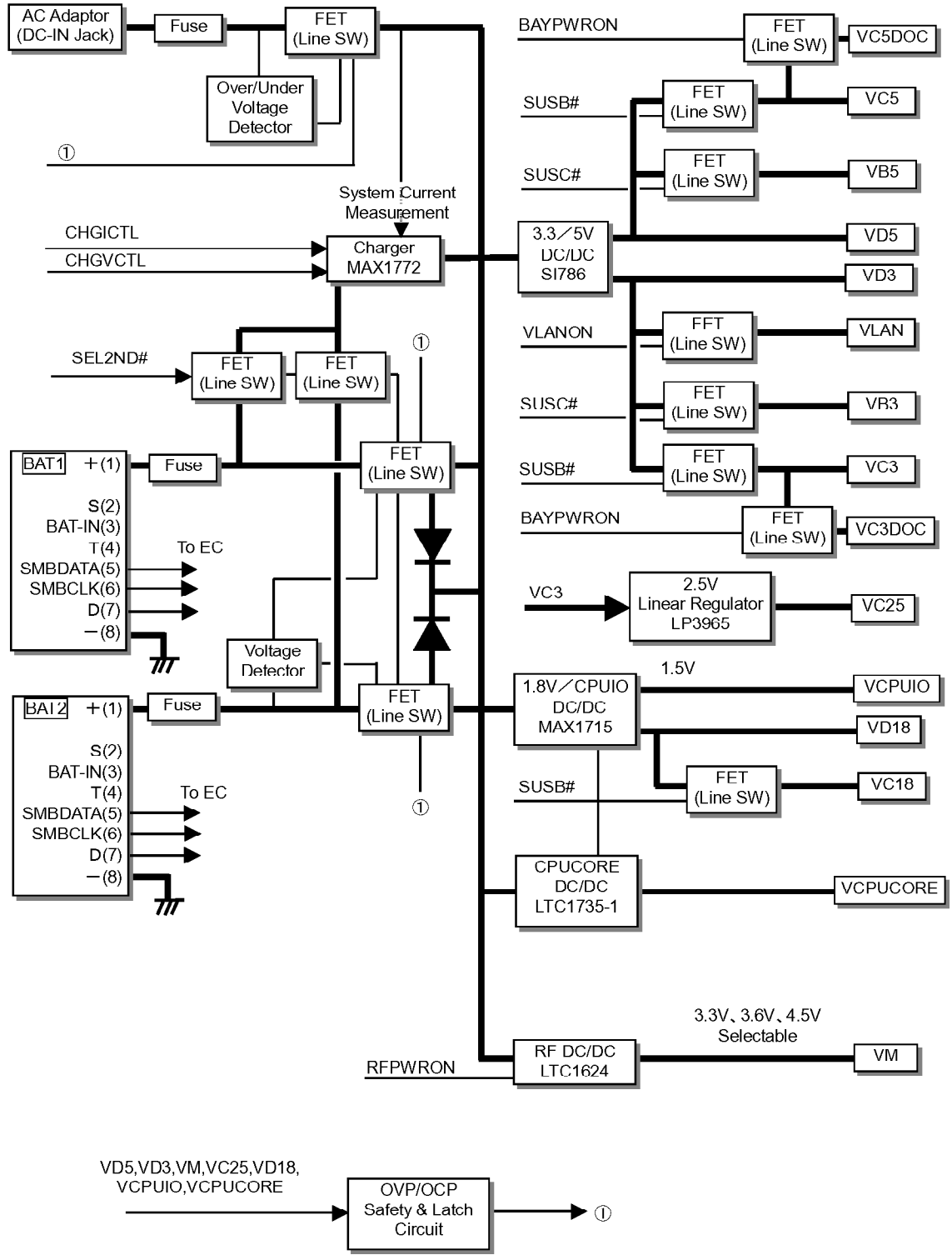
e.g. [c:\winnt\cdimage\i386] in place of [D:\i386]

5 Block Diagrams

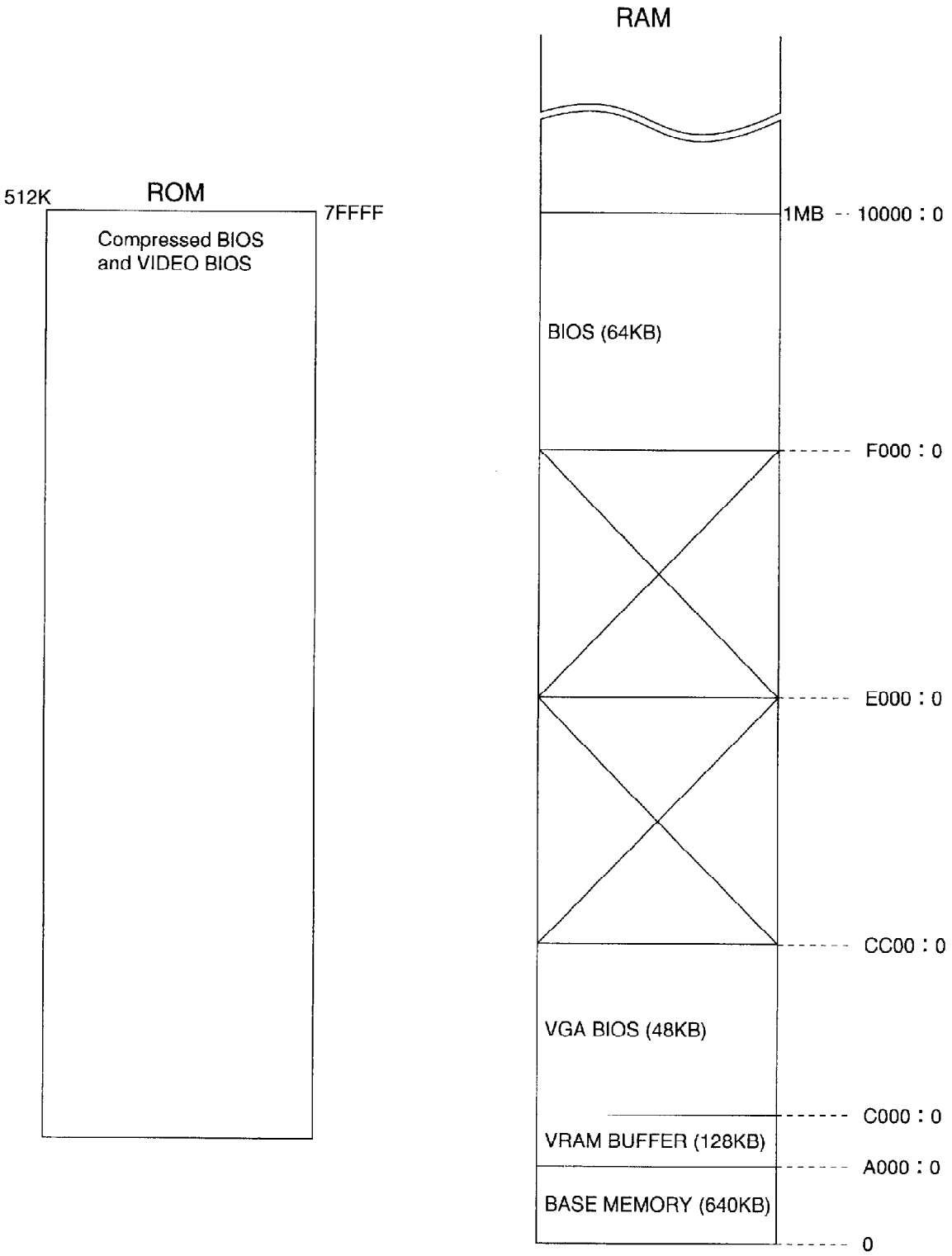
System Configuration Diagram



Power Supply Configuration Diagram



6 System Memory Map



7 I/O Address Map

Address	Function
x0000 - x000F	Direct memory access controller
x0010 - x001F	Motherboard resources
x0020 - x0021	Programmable interrupt controller
x0024 - x0025	Motherboard resources
x0028 - x0029	Motherboard resources
x002C - x002D	Motherboard resources
x002E - x002F	Motherboard resources
x0030 x0031	Motherboard resources
x0034 - x0035	Motherboard resources
x0038 - x0039	Motherboard resources
x003C - x003D	Motherboard resources
x0040 - x0043	System timer
x004E - x004F	Motherboard resources
x0050 - x0053	Motherboard resources
x0060 - x0060	Standard 101/102-Key or Microsoft Natural Keyboard
x0061 - x0061	System speaker
x0064 - x0064	Standard 101/102-Key or Microsoft Natural Keyboard
x0070 - x0071	System CMOS/real time clock
x0072 - x0077	Motherboard resources
x0080 - x0080	Motherboard resources
x0081 - x008F	Direct memory access controller
x0090 - x009F	Motherboard resources
x00A0 - x00A1	Programmable interrupt controller
x00A4 - x00A5	Motherboard resources
x00A8 - x00A9	Motherboard resources
x00AC - x00AD	Motherboard resources
x00B0 - x00B5	Motherboard resources
x00B8 - x00B9	Motherboard resources
x00BC - x00BD	Motherboard resources
x00C0 - x00DF	Direct memory access controller
x00F0 - x00FF	Numeric data processor
x0170 - x0177	Intel(R) 82801BAM Ultra ATA Storage Controller - 244A
x0170 - x0177	Secondary IDE controller (dual fifo)
x01F0 - x01F7	Intel(R) 82801BAM Ultra ATA Storage Controller - 244A
x01F0 - x01F7	Primary IDE controller (dual fifo)
x02E8 - x02EF	Communications Port (COM4)
x02F8 - x02FF	Communications Port (COM2)
x0376 - x0376	Intel(R) 82801BAM Ultra ATA Storage Controller - 244A
x0376 - x0376	Secondary IDE controller (dual fifo)
x0378 - x037F	ECP Printer Port (LPT1)
x03B0 - x03BB	Intel(R) 82815 Graphics Controller
x03C0 - x03DF	Intel(R) 82815 Graphics Controller
x03E8 - x03EF	Communications Port (COM3)
x03F6 - x03F6	Intel(R) 82801BAM Ultra ATA Storage Controller - 244A
x03F6 - x03F6	Primary IDE controller (dual fifo)
x03F8 - x03FF	Communications Port (COM1)
x04D0 - x04D1	Motherboard resources

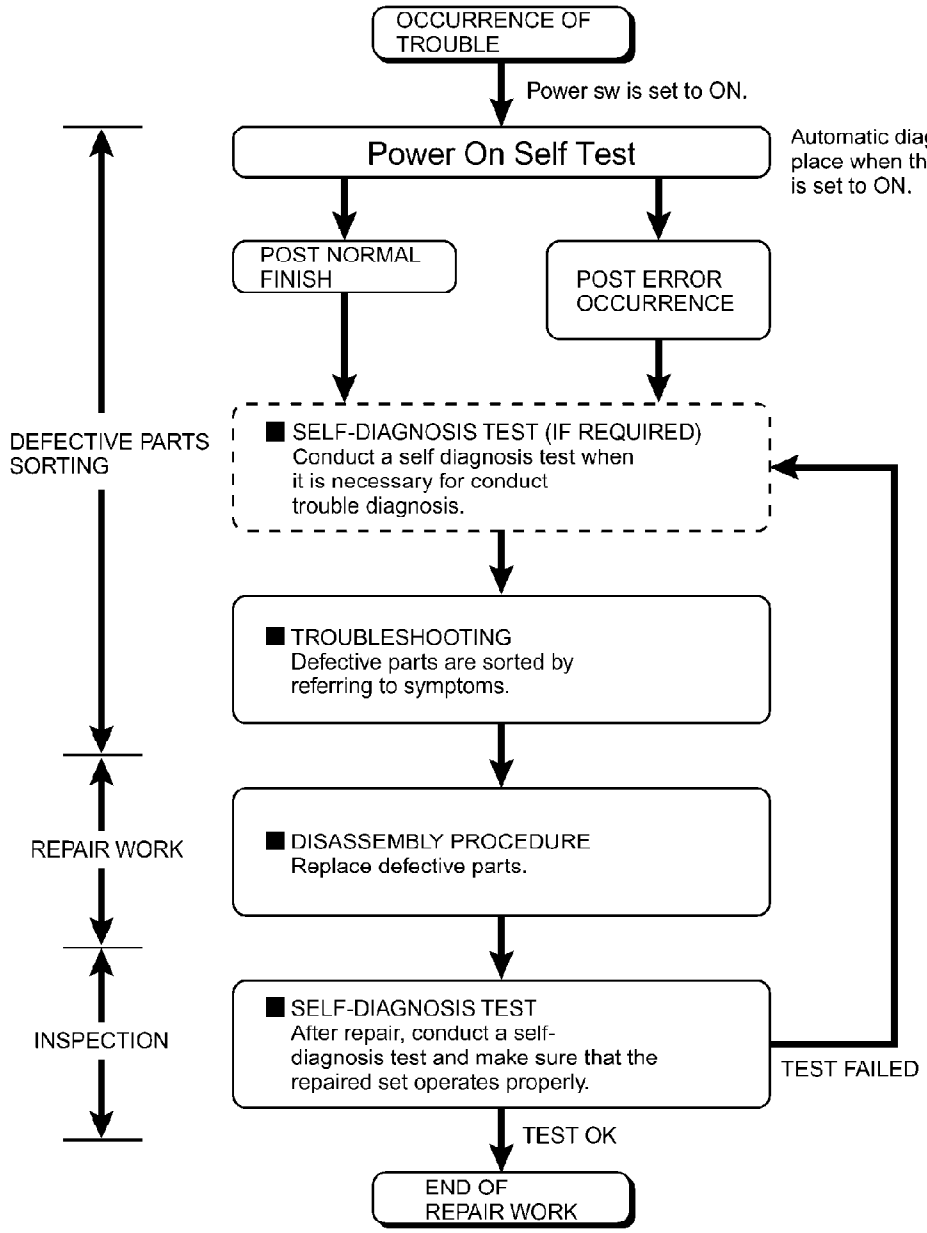
Address	Function
x0778 - x077F	ECP Printer Port (LPT1)
x0CF8 - x0CFF	PCI bus
x1000 - x107F	Motherboard resources
x1080 - x10BF	Ricoh RL5C476 CardBus Controller
x1080 - x10BF	PRISM2 IEEE 802.11 PC CARD Adapter
x10D0 - x10DF	Ricoh RL5C476 CardBus Controller
x10D0 - x10DF	HITACHI ATA FlashDisk
x10E0 x10EF	Intel(R) 82801BA/BAM SMBus Controller 2443
x1170 - x1177	Alias of Intel(R) 82801BAM Ultra ATA Storage Controller - 244A
x1170 - x1177	Alias of Secondary IDE controller (dual fifo)
x1180 - x11BF	Motherboard resources
x1400 - x14FF	Crystal WDM Audio Codec
x1800 - x1807	Primary IDE controller (dual fifo)
x1800 - x180F	Intel(R) 82801BAM Ultra ATA Storage Controller - 244A
x1808 - x180F	Secondary IDE controller (dual fifo)
x1820 - x183F	Intel(R) 82801BA/BAM USB Universal Host Controller - 2442
x1840 - x187F	Crystal WDM Audio Codec
xE000 - xE03F	Motherboard resources
xE040 - xE07F	Motherboard resources
xE080 - xE0BF	Motherboard resources
xE0C0 - xE0FF	Motherboard resources
xE100 - xE107	Motherboard resources
xFE00 - xFE01	Motherboard resources

8 Diagnosis Procedure

Basic Procedures

The basic procedures for diagnosis, disassembly, and test of defective parts of a set to be repaired are summarized below. For details, refer to relevant pages in the Service Manual.

● Flow Chart


OCCURRENCE OF TROUBLE
Power sw is set to ON.
Power On Self Test
Automatic diagnosis takes place when the power switch is set to ON.
POST NORMAL FINISH
POST ERROR OCCURRENCE
DEFECTIVE PARTS SORTING
■ SELF-DIAGNOSIS TEST (IF REQUIRED)
Conduct a self diagnosis test when it is necessary for conduct trouble diagnosis.
■ TROUBLESHOOTING
Defective parts are sorted by referring to symptoms.
REPAIR WORK
■ DISASSEMBLY PROCEDURE
Replace defective parts.
INSPECTION
■ SELF-DIAGNOSIS TEST
After repair, conduct a self-diagnosis test and make sure that the repaired set operates properly.
TEST FAILED
TEST OK
END OF REPAIR WORK

9 Power-On Self Test (Boot Check)

Outline of POST

The set has a boot check function called POST (Power-On Self Test) in it. The condition of the main body is diagnosed by checking beep sound or error code.

- Start .....Test begins automatically when power switch is set to ON.
- Normal finish .....After memory checking, a beep sound is issued once and the set is placed into automatic stop.

Note: If no error occurs, nothing is displayed. (No display of OK, etc.)

Error Diagnosis by Checking Beep Signal Sound

The beep sound is as follows:

(1 (long sound) -2-3-4)

(Length of bar shows length of sound.)

■ = long sound (about 0.4 sec.), ■ = short sound (about 0.2 sec.), Length between sounds is about 0.1 sec.

- **Table of errors classified by beep sounds**

Diagnosis	Beep signal sound	Error message
Main board	1(long sound)-2	BIOS ROM error
	1-2-2-3	BIOS ROM error
	1-3-1-1	RAM error
	1-3-1-3	Keyboard controller error
	1-3-4-1	RAM error
	1-3-4-3	RAM error
	1-4-1-1	RAM error
	2-1-2-3	BIOS ROM error
	2-2-3-1	Occurrence of unexpected offering

(Note) A beep sound is also issued in case of other I/O trouble.

10 List of Error Codes <Only when the port replicator is connected>

The following is a list of the messages that BIOS can display. Most of them occur during POST. Some of them display information about a hardware device, e.g., the amount of memory installed. Others may indicate a problem with a device, such as the way it has been configured. Following the list are explanations of the messages and remedies for reported problems.
If your system displays one of except the messages marked below with an asterisk (*), write down the message and contact Panasonic Technical Support. If your system fails after you make changes in the Setup menus, reset the computer, enter Setup and install Setup defaults or correct the error.

0200 Failure Fixed Disk
Fixed disk in not working or not configured properly. Check to see if fixed disk is attached properly. Run Setup. Find out if the fixed-disk type is correctly identified.

0210 Stuck key
Stuck key on keyboard.

0211 Keyboard error
Keyboard not working.

0212 Keyboard Controller Failed
Keyboard controller failed test. May require replacing keyboard controller.

0213 Keyboard locked - Unlock key switch
Unlock the system to proceed.

0230 System RAM Failed at offset : *nnnn*
System RAM failed at offset *nnnn* of in the 64k block at which the error was detected.

0231 Shadow RAM Failed at offset : *nnnn*
Shadow RAM failed at offset *nnnn* of the 64k block at which the error was detected.

0232 Extended RAM Failed at offset : *nnnn*
Extended memory not working or not configured properly at offset *nnnn*.

0250 System battery is dead - Replace and run SETUP
The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.

***0251 System CMOS checksum bad - Default configuration used**
System CMOS has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS. The BIOS installed Default SETUP Values. If you do not want these values, enter Setup and enter your own values. If the error persists, check the system battery or contact Panasonic Technical Support.

0260 System timer error
The timer test failed. Requires repair of system board.

0270 Real time clock error
Real-time clock fails BIOS test. May require board repair.

***0280 Previous boot incomplete - Default configuration used**
Previous POST did not complete successfully. POST loads default values and offers to run Setup. If the failure was caused by incorrect values and they are not corrected, the next boot will likely fail. On systems with control of **wait states**, improper Setup settings can also terminate POST and cause this error on the next boot. Run Setup and verify that the wait-state configuration is correct. This error is cleared the next time the system is booted.

0281 Memory Size found by POST differed from EISA CMOS
Memory size found by POST differed from EISA CMOS.

02D0 System cache error - Cache disabled
Contact Panasonic Technical Support.

02F0: CPU ID:
CPU socket number for Multi-Processor error.

02F4: EISA CMOS not writable
ServerBIOS2 test error: Cannot write to EISA CMOS.

02F5: DMA Test Failed
ServerBIOS2 test error: Cannot write to extended DMA (Direct Memory Access) registers.

02F6: Software NMI Failed
ServerBIOS2 test error: Cannot generate software NMI (Non-Maskable Interrupt).

02F7: Fail - Safe Timer NMI Failed
ServerBIOS2 test error: Fail-Safe Timer takes too long.

***device* address Conflict**
Address conflict for specified *device*.

Allocation Error for: *device*
Run ISA or EISA Configuration Utility to resolve resource conflict for the specified *device*.

Failing Bits : *nnnn*
The hex number *nnnn* is a map of the bits at the RAM address which failed the memory test. Each 1 (one) in the map indicates a failed bit. See error 230,231 or 232 for offset address of the failure in System, Extended or Shadow memory.

Invalid System Configuration Data
Problem with NVRAM (CMOS) data.

I/O device IRQ conflict
I/O device IRQ conflict error.

Operating System not found
Operating system cannot be located on either drive A: or drive C:. Enter Setup and see if fixed disk and drive A: are properly identified.

Parity Check 1 *nnnn*
Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????. Parity is a method for checking errors in binary data. A parity error indicates that some data has been corrupted.

Parity Check 2 *nnnn*
Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????.

Press <F1> to resume, <F2> to Setup
Displayed after any recoverable error message. Press <F1> to start the boot process or <F2> to enter a Setup and change the settings. Write down and follow the information shown on the screen.

11 Diagnosis

1. MAIN UNIT DIAGNOSIS (1/2)

Make sure that connecting cables, connectors and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures No.	Troubleshooting procedures	Result	Source of problem	Component
1	No power is sent to the unit. (when using AC)	1-1	Is 15V applied to pins 2 of Q807? (Whichever one)?	YES	Go to No. 1-4	——
				NO	Go to No. 1-2	——
		1-2	Is 15V applied to pins 8 of Q805?	YES	Go to No. 1-4	——
				NO	Go to No. 1-3	——
		1-3	Is 15V applied to pins 2 of Q805?	YES	Go to No. 1-4	——
				NO	If resistance across LA800 terminals is not lower than 1	LA800
					If lower than 1	F800
		1-4	Before setting the power switch to ON, check voltage on either side of SW1. Is Voltage 3.3V?	YES	If voltage is 0V during the power switch is set to ON, go to No. 1-5	——
					If not 0V	SW1
				NO	If voltage of C825 is 3.3V	R854 R855
					If lower than 3V	IC801
		1-5	Final Means		Main PCB	IC801
2	No power is sent to the unit, (When using the Battery Pack) Power cuts off during operation.	1-6	Is 8~12V applied to pins 5~8 of Q855, 856? (Whichever one)	YES	Go to No. 1-4	——
				NO	Main PCB	Q844
		2-1	Check soldered parts of R840, 842, 854 and R855.	NO	If they show soldered completely	R840, R842 R854, R855
				YES		IC801

2. MAIN UNIT DIAGNOSIS (2/2)

Make sure that connecting cables, connectors and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures No.	Troubleshooting procedures	Result	Source of problem	Component
1	When a device is selected for HDD, the system boots from a different device.	1-1	Are there system files in the device selected?	YES	Go to No. 1-2	——
				NO	Improper setting	——
		1-2	Does the unit operate normally after replacing the problem device.	YES	Device for which the problem occurred	——
				NO	Main PCB	IC11

No.	Symptom	Troubleshooting procedures			Source of problem	Component
		No.		Result		
2	Date or Time cannot be input. Date and Time does not change properly. Date and Time are not displayed.	2-1	Replace the Main PCB.	—	Main PCB	IC11 X2 RTC battery
3	Memory count is too large or too small.	3-1	Replace the Main PCB.	—	Main PCB	IC5 ~ 8 IC4
4	No Sound Volume does not work.	4-1	Check software setting.	YES	Software setting	——
				NO	Go to No. 4-2	——
		4-2	Replace the Speakers. Does operation return to normal?	YES	Speakers	——
				NO	Go to No. 4-3	——
		4-3	Replace the Main PCB.	—	Main PCB	IC7 IC10
5	Default configuration in use	5-1	Check configuration.	—	Configuration	——
6	Interrupt controller failure	6-1	———	—	Main PCB	IC11
7	Timer failure	7-1	———	—	Main PCB	——
8	Expansion card ROM checksum error	8-1	Does the system return to normal if the expansion card is removed?	YES	Go to No. 8-2	——
				NO	Main PCB	IC11 IC4
		8-2	Replace the expansion card. Does operation return to normal?	YES	Expansion card	——
				NO	Main PCB	——
9	Real Time Clock failure	9-1	———	—	Main PCB	IC11
10	Dead RTC Battery	10-1	Does resetting through SETUP correct the problem?	YES	Error during SETUP	——
				NO	Go to No. 10-2	——
		10-2	Replace the battery. Does operation return to normal?	YES	Battery	RTC battery
				NO	Main PCB	IC11
11 12	Configuration error CMOS Checksum error	11-1	Check configuration.	—	Configuration	——
		12-1	Were the correct settings selected during SETUP?	YES	Go to No. 12-2	——
				NO	Go to No. 12-4	——
		12-2	Replace the FDD. Does operation return to normal?	YES	FDD	——
				NO	Go to No. 12-3	——
		12-3	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Go to No. 12-4	——
		12-4	Does resetting through SETUP correct the problem?	YES	Error during SETUP	——
				NO	Main PCB	IC11 X2

No.	Symptom	Troubleshooting procedures			Source of problem	Component
		No.		Result		
13	Real time Clock is not updating	13-1	Does resetting the date/time in SETUP correct the problem?	YES	Error during SETUP	——
				NO	Main PCB	IC11
14	Memory size/data error	14-1	Replace the expansion RAM card. Does operation return to normal? (Go to "NO" if not connected.)	YES	Expansion RAM card	——
				NO	Main PCB	IC4 IC5 ~ 8
15	PCI failur	15-1	Does the system return to normal if the expansion card is removed?	YES	Go to No. 15-2	——
				NO	Main PCB	IC4
		15-2	Replace the expansion card. Does operation return to normal?	YES	Expansion card	——
				NO	Main PCB	IC4

3. Wireless Display (CF-VDW07) DIAGNOSIS

Make sure that connecting cables, connectors, Battery Pack and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures			Source of problem	Component
		No.		Result		
1	No picture appears on the screen.	1-1	Does the LCD display properly after brightness level is adjusted?	YES	Brigntness adjustment	——
				NO	Go to No. 1-2	——
		1-2	Replace the LCD. Does operation return to normal?	YES	LCD	——
				NO	Go to No. 1-3	——
		1-3	Replace the Main PCB. Does operation return to normal?	YES	Main PCB (CF-VDW07)	IC24
				NO	LCD cable	——
2	Display is too dark or too bright.	2-1	Does the LCD display properly after brightness level is adjusted?	YES	Brigntness adjustment	——
				NO	Go to No. 2-2	——
		2-2	Replace the LCD. Does operation return to normal?	YES	LCD	——
				NO	Go to No. 2-3	——
		2-3	Replace the Main PCB. Does operation return to normal?	YES	Main PCB (CF-VDW07)	CN3 Q56
				NO	LCD cable	——
3	Part of the screen does not display properly. Display quality poor. (Fuzzy or slanted, etc.)	3-1	Replace the LCD. Does operation return to normal.	YES	LCD	——
				NO	Go to No. 3-2	——
		3-2	Replace the Main PCB. Does operation return to normal?	YES	Main PCB (CF-VDW07)	IC24
				NO	LCD cable	——
4	Backlight does not turn on.	4-1	Replace the Inverter PCB. Does operation returnt o normal?	YES	Inverter PCB	——
				NO	Go to No. 4-2	——
		4-2	Replace the Inverter cable. Does operation return to normal?	YES	Inverter cable	——
				NO	Go to No. 4-3	——
		4-3	Replace the backlight. Does operation return to normal?	YES	Backlight	
				NO	Main PCB (CF-VDW07)	CN3 Q56

No.	Symptom	Troubleshooting procedures			Source of problem	Component
		No.		Result		
5	Cannot connect Wireless LAN	5-1	Re-setting for Wireless LAN and Display	YES	Settings	——
				NO	Go to No. 5.1~5.6	——
		5-2	Replace the Wireless LAN PCB	YES	Wireless LAN PCB (CF-07/ CF-VDW07)	IC509 IC514
				NO	Go to No. 5.1~5.6	——
5.1	No display after powering on	1-1	Has the computer or wireless display been set to the power-saving mode? To resume operation of your computer from the condition the power of the display is off (for energy conservation purposes), touch the screen.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
	An afterimage appears	1-2	If an image is displayed for a prolonged period of time, an afterimage may appear. Set the screensaver.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
5.2	Connection timeout is displayed	2-1	Confirm the IP address, subnet mask, network type, and SSID settings on both the computer and the wireless display.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
		2-2	Confirm the operation of the wireless LAN on the computer.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
5.3	No server found is displayed	3-1	Put the wireless display close to the computer.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
		3-2	Confirm that wireless icon is on the taskbar.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
		3-3	Confirm the IP address of the computer that has been set on the wireless display.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
5.4	Authentication failed is displayed	4-1	Confirm the password for both the computer and the wireless display.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
5.5	Too many clients is displayed	5-1	Disconnect the wireless display during operation and reestablish the connection.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
5.6	Illegal data received or Initial image receiving timeout is displayed	6-1	Confirm whether the network is working properly or not.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
		6-2	Restart the computer.	YES	Settings	——
				NO	Go to No. 1-1~7-1	——
5.7	Wireless connection is interrupted	7-1	Select wireless icon on the taskbar of the external display, then select Contiguration, and then set Tx Rate to Auto 1 or 2 Mb. (CF-07)	YES	Settings	——
				NO	Go to No. 1-1~7-1	——

4. KEYBOARD, MOUSE DIAGNOSIS

Make sure that connecting cables, connectors and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures		Result	Source of problem	Component
		No.				
1	Key top cannot be pressed. Key top does not spring back after pressing.	1-1	Keyboard is broken.	—	Keyboard	——
2	None of the keys function. Certain keys do not function.	2-1	Replace the keyboard and see if inputting from the keyboard function normally?	YES	Keyboard	——
				NO	Main PCB	——
3	Input character is displayed as grabage.	3-1	Does the screen mode correspond to the key entry mode?	YES	Go to No. 3-2	——
				NO	Operating mistake	——
		3-2	Is the keyboard setting in the operating system correct?	YES	Go to No. 3-3	——
				NO	Software setting	——
		3-3	Replace the keyboard and see if inputting from the keyboard functions normally.	YES	Keyboard	
				NO	Main PCB	IC20
4	Mouse does not function. Inputs from the mouse are not accepted properly.	4-1	Replace the mouse. Does operation return to normal?	YES	Mouse	——
				NO	Main PCB	IC20
5	Keyboard failure	5-1	Is the keyboard properly connected?	YES	Go to No. 6	——
				NO	Keyboard was not connected properly	——
6	Keyboard interface failure	6-1	Replace the keyboard. Does operation return to normal?	YES	Keyboard	——
				NO	Main PCB	IC20

5. HDD DIAGNOSIS

Make sure that connecting cables, connectors and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures			Source of problem	Component
		No.		Result		
1	Does not boot from HDD.	1-1	Has the HDD been partitioned?	YES	Go to No. 1-2	——
				NO	Improper setting	——
		1-2	Are there system files on the HDD?	YES	Go to No. 1-3	——
				NO	Software on the HDD	——
		1-3	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Go to No. 1-4	——
		1-4	Replace the HDD cable. Does operation return to normal?	YES	HDD cable	——
				NO	Main PCB	IC11
2	Cannot read from HDD. Cannot write to HDD.	2-1	Has the HDD been formatted?	YES	Go to No. 2-2	——
				NO	HDD format	——
		2-2	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Go to No. 2-3	——
		2-3	Replace the HDD cable. Does operation return to normal?	YES	HDD cable	——
				NO	Main PCB	IC11
3	Damage to data written to HDD. Damage to data read from HDD. HDD contents are destroyed.	3-1	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Go to No. 3-2	——
		3-2	Replace the HDD cable. Does operation return to normal?	YES	HDD cable	——
				NO	Main PCB	IC11
4	Dignositic Test reports problem in HDC or HDD.	4-1	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Main PCB	IC11
5	Access lamp does not light.	5-1	Has the HDD been configured in the OS?	YES	Go to No. 5-2	——
				NO	Improper setting	——
		5-2	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Go to No. 5-3	——
		5-3	Replace the LED PCB. Does operation return to normal?	YES	LED PCB	LD2
				NO	Go to No. 5-4	——
		5-4	Replace the Main PCB. Does operation return to normal?	YES	Main PCB	IC11
				NO	HDD cable	——
6	Abnormal sound.	6-1	Replace the HDD.	—	HDD	——
7	Hard disk failure	7-1	Does executing FDISK correct the problem?	YES	Format data destroyed	
				NO	Go to No. 7-2	——
		7-2	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Go to No. 7-3	——
		7-3	Replace the HDD cable. Does opration return to normal?	YES	HDD cable	——
				NO	Main PCB	IC11

No.	Symptom	Troubleshooting procedures			Source of problem	Component
		No.		Result		
8	An operating system could not be found	8-1	Does executing FDISK correct the problem?	YES	Format data destroyed	——
				NO	Go to No. 8-2	——
		8-2	Replace the HDD. Does operation return to normal?	YES	HDD	——
				NO	Go to No. 8-3	——
		8-3	Replace the HDD cable. Does operation return to normal?	YES	HDD cable	——
				NO	Main PCB	IC11

6. SERIAL COMMUNICATION DIAGNOSIS

Make sure that connecting cables, connectors and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures			Source of problem	Component
		No.		Result		
1	Data cannot be sent or received.	1-1	Is the COM port properly set?	YES	Go to No. 1-2	——
				NO	Improper setting	——
		1-2	Is the same transmission protocol set for both the sending and receiving units?	YES	Go to No. 1-3	——
				NO	Improper setting	——
		1-3	Does the RS-232C on the Main PCB operate normally under a loopback test?	YES	Check the interface with the other computer	——
				NO	Main PCB	IC18 IC19
2	Unit will not communicate with another computer when connected directly.	2-1	Is the connection cable a dedicated cross patched cable?	YES	Go to No. 2-2	——
				NO	Connection cable	——
		2-2	Is the same transmission protocol set for both the sending and receiving units?	YES	Go to No. 2-3	——
				NO	Improper setting	——
		2-3	Does the RS-232C on the Main PCB operate normally under a reverse test?	YES	Check the interface with the other computer	——
				NO	Main PCB	IC18 IC19
3	Unit will not communicate with modem.	3-1	Is the COM port properly set?	YES	Go to No. 3-2	——
				NO	Improper setting	——
		3-2	Is the trasmission protocol correct?	YES	Go to No. 3-3	——
				NO	Improper setting	——
		3-3	Does the modem operate normally under a local analog loopback test?	YES	Line	——
				NO	Go to No. 3-4	——
		3-4	Does the RS-232C on the main board operate normally under a loopback test?	YES	Modem	——
				NO	Main PCB	IC18 IC19

7. PRINTING DIAGNOSIS

Make sure that connecting cables, connectors and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures No.	Troubleshooting procedures	Result	Source of problem	Component
1	Data does not print from the printer.	1-1	Does the printer pass its self-printing test?	YES	Main PCB (CF-VEB071)	IC3
				NO	Printer	——
2	Data prints out incorrectly.	2-1	Does the printer pass its self-printing test?	YES	Go to No. 2-2	——
				NO	Printer	——
		2-2	Is the Parallel Port (Data Direction) setting correct?	YES	Main PCB (CF-VEB071)	IC3
				NO	Improper setting	——
3	The unit hangs after outputting data from the printer.	3-1	Replace the Main PCB. Does operation return to normal?	YES	Main PCB (CF-VEB071)	IC3
				NO	Printer	——
4	Print area is out of line.	4-1	Does the printer pass its self-printing test?	YES	Main PCB (CF-VEB071)	IC3
				NO	Printer	——
5	Data is printed all on one line. (Carriage return does not work.)	4-2	Does the printer pass its self-printing test?	YES	Main PCB (CF-VEB071)	IC3
				NO	Printer	——

8. CD-ROM Drive DIAGNOSIS

Make sure that connecting cables, connectors and AC adapter are not loose or disconnected prior to testing.

No.	Symptom	Troubleshooting procedures No.	Troubleshooting procedures	Result	Source of problem	Component
1	Access lamp of CDD does not light.	1-1	Replace the CD ROM drive. Does operation return to normal?	YES	CD-ROM drive	——
				NO	Go to No. 1-2	——
		1-2	Replace the Main PCB. Does operation return to normal?	YES	Main PCB	IC11
				NO	CD-ROM FPC	
2	Cannot read from DVD.	2-1	Replace the media. Does operation return to normal?	YES	Media	——
				NO	Go to No. 2-2	——
		2-2	Replace the CD-ROM drive. Does operation return to normal?	YES	CD-ROM drive	——
				NO	Main PCB	IC11
3	Tray does not open.	3-1	Replace the CD-ROM drive. Does operation return to normal?	YES	CD-ROM drive	——
				NO	Main PCB	IC11
4	Abnormal sound.	4-1	Replace the media. Does operation return to normal?	YES	Media	——
				NO	CD-ROM drive	——

12 Diagnostic Test

Diagnostic Test Procedure

1. Equipment

(1) Test Computer ---------- 1 unit
(2) Port Replicator (CF-VEB071) ---------- 1 unit
(3) External Keyboard ---------- 1 unit
(4) External Display ---------- 1 unit
(5) External Floppy Disk Drive ---------- 1 unit
(6) AC Adapter ---------- 1 pc.
(7) External Printer ---------- 1 unit
(8) Loopback Plug (Parallel Port Test) [P/N: DFWV95C0081] ---------- 1 pc.
(9) Loopback Plug (Serial Port Test for RS232C) [P/N: DFWV95C0067] -1 pc.
(10) Floppy Disk containing file DIAG ---------- 1 pc.

2. Preparation

(1) Connect the computer (CF-07) to the port replicator (CF-VEB071).
(2) Connect the AC Adapter and External Equipments.
(3) The System Setup should be set to the factory setting values by executing the "SETUP UTILITY" which can be invoked by F2 key at the POST.
If not, the messages and items of the diagnostic test may not be displayed properly on the LCD.
(4) The serial port must be enabled in the "SETUP UTILITY" in order to execute the "1st SERIAL PORT" test.
(5) Connect the serial loopback plug.
(6) In order to test the parallel port with Loopback Plug, disconnect the printer cable and connect the parallel loopback plug with Power OFF.

3. NOTICE

When "Enter password" is displayed, use "Password Skipping Plug" in order to skip the user password.

1) Connect the parallel plug to the parallel port.
2) Connect the PS/2 mouse plug to the mouse port.
3) Power on the computer.

The wiring of the parallel plug is described below.
Connect pins 2-5-6-8-11-13-15-18-19-20-21-22-23 to Shield GND (PS/2 mouse plug pin 3.)
Connect pins 3-4-7-9-10-12 to VC5 (PS/2 mouse plug pin 4) with 4.7KW each.

CAUTION

The plug described above must be used for servicing purpose only.
Do not use it for other than the above purpose and ensure that it remains confidential.
Using the plug enables the user to skip the previous password and disable the password.

13 Self Diagnosis Test

1.Floppy disk is included for the self-diagnostic tests that should be performed before using this product.

2.Connect Keyboard (PS/2) and External Display (CRT) with Port Replicator CF-VEB071 for diagnosis test.

Important notice

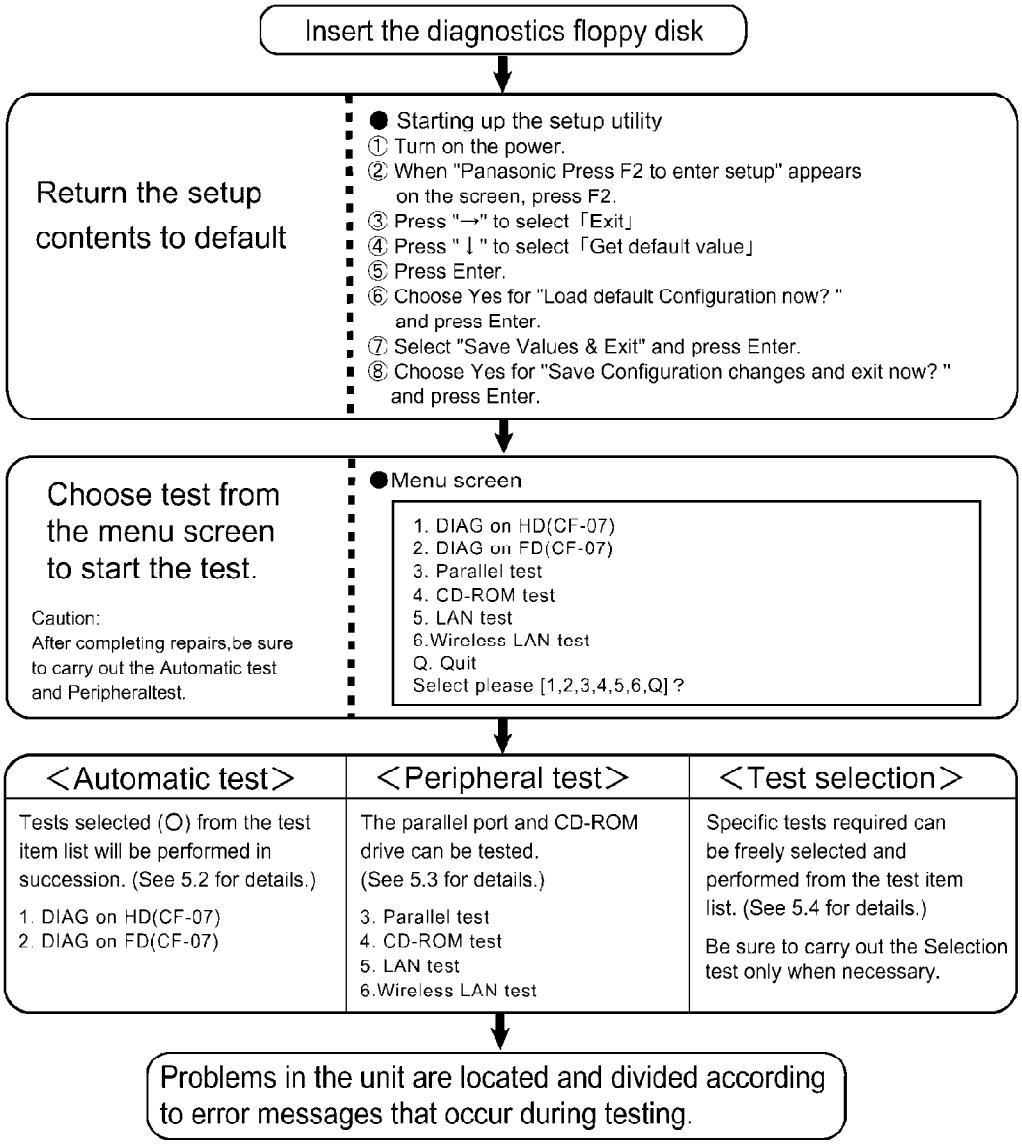
1. **System password**

   If the password function has been turned on, you will need to ask the user for the password before performing the self-diagnostics.

2. **FDD test**

   Performing the FDD test will erase the contents of the floppy disk you insert into the drive. Use a formatted disk that has no contents or whose contents are not required. This product has a password function. However, if this function is turned on, the self-diagnostics tests will not work.

1. Outline of Self Diagnostic Tests


Insert the diagnostics floppy disk
Return the setup contents to default
● Starting up the setup utility
① Turn on the power.
② When "Panasonic Press F2 to enter setup" appears on the screen, press F2.
③ Press "→" to select 「Exit」
④ Press " ↓ " to select 「Get default value」
⑤ Press Enter.
⑥ Choose Yes for "Load default Configuration now? " and press Enter.
⑦ Select "Save Values & Exit" and press Enter.
⑧ Choose Yes for "Save Configuration changes and exit now? " and press Enter.
Choose test from the menu screen to start the test.
Caution:
After completing repairs,be sure to carry out the Automatic test and Peripheraltest.
●Menu screen
1. DIAG on HD(CF-07)
2. DIAG on FD(CF-07)
3. Parallel test
4. CD-ROM test
5. LAN test
6.Wireless LAN test
Q. Quit
Select please [1,2,3,4,5,6,Q] ?
<Automatic test>
Tests selected (O) from the test item list will be performed in succession. (See 5.2 for details.)
1. DIAG on HD(CF-07)
2. DIAG on FD(CF-07)
<Peripheral test>
The parallel port and CD-ROM drive can be tested. (See 5.3 for details.)
3. Parallel test
4. CD-ROM test
5. LAN test
6.Wireless LAN test
<Test selection>
Specific tests required can be freely selected and performed from the test item list. (See 5.4 for details.)
Be sure to carry out the Selection test only when necessary.
Problems in the unit are located and divided according to error messages that occur during testing.

1.1. List of main test items

The Selection item displays the items selected under Automatic test. If you select Automatic test, these test items will be performed automatically. You can use Selection test to choose items from the menu screen that you want to have tested. These items are shown below.

	Test classification	Test items shown on the screen	Contents	Select
1		SPEAKER TEST	Speaker test	○
2		VESA MODE TEST	VESA mode test	○
3	CPU (CPU related)	A20 GATE TEST	Address A20 line	○
4		CACHE ON/OFF TEST	Cache memory on/off test	○
5		NPU OPERAND TEST	Floating point processor function test	○
6	RAM(Memory related)	RAM STANDARD TEST	Memory standard test	○
7	CONTROL (Control ICs on the main board, etc.)	DMA PAGE REG TEST	DMA page register test	○
8		DMA REGISTER TEST	DMA register test	○
9		DMAC Transfer TEST	DMA transfer test	○
10		PIC HALT INSTRUCTION TEST	Interrupt controller halt instruction test	○
11		PIC REGISTER TEST	Interrupt controller register test	○
12		RTC CMOS RAM TEST	Real time clock CMOS test	○
13		RTC TEST	Real time clock test	○
14		PIT CH0 TEST	Interrupt timer CH0	○
15		PIT CH1 TEST	Interrupt timer CH1	○
16		PIT CH2 TEST	Interrupt timer CH2	○
17	IO (Input-output)	KEYBOARD REG TEST	Keyboard test	○
18		PS/2 MOUSE REG	Mouse registration test	○
19	COMMUNICATION	SERIAL WRAP TEST	Serial loop back (jig required)	-
20		SERIAL ALL INTERNAL TEST	Serial port interior test	○
21		PARALLEL REGISTER R/W	Parallel register R/W test	○
22	AUX (Auxiliary functions)	PCIC ALL TEST	PCIC test	○
23		Card Bus Reg	Card Bus register test	○
24		USB Reg	USB register test	○
25	VIDEO (Display related)	VGA ALL TEST	VGA test	○
26		SVGA RAM TEST	SVGA RAM test	○
27	DISK (FDD, HDD)	FD WT/RD/WP TEST	FD WT, RD WP test	-
28		HDD ALL TEST	Only HDD lead test selected	○
29	UNIQUE (Individual functions)	ECP REGISTER R/W	ECP register R/W test	○
30		EPP REGISTER R/W	EPP register R/W test	○
31		EXT. CMOS R/W TEST	Extension CMOS R/W test	○

	Test function settings	Test condition save/play	Following file command
		Test automatic execute	Test executed on run settings by selecting command
		Error display (Paging style)	Select displayed items Error, Log, Option

2. Automatic Test

Test execution

From the menu screen shown below For Celeron modelsSelect and press Enter for

DIAG on HD

DIAG on FD

```
1. DIAG on HD(CF-07)
2. DIAG on FD(CF-07)
3. Parallel test
4. CD-ROM test
5. LAN test
6.Wireless LAN test
Q. Quit
Select please [1,2,3,4,5,6,Q]?
```

menu screen

(Reference)

The difference between DIAG on FD and DIAG on HD is whether the machine will perform diagnostics directly from the floppy disk, or first copy the program from the floppy disk to the hard disk and then perform diagnostics. Choosing one or the other has no effect on the results of the test.

Speaker test, VESA test

The speaker test involves listening to music and choosing OK or Not okay. The VESA test involves looking at the display to see if it is satisfactory then choosing OK or Not okay.

Serial loop back test

The Automatic test´s initial settings are set so that the serial loop back test will be executed. Connect the serial loop back jig and then perform the test.

(This test is not executed on default mode)

Diagnostics result

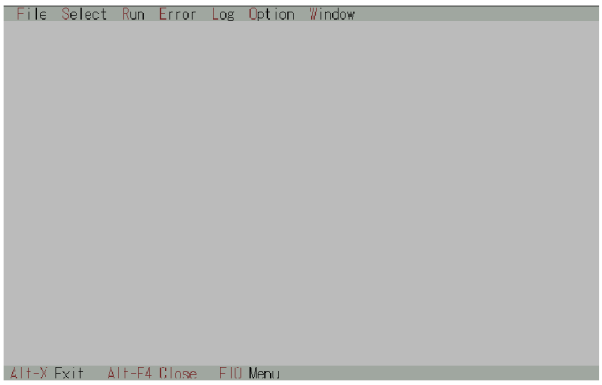
If no errors occur: The screen shows the word "Pass" in large letters.

If errors occur: The test is stopped when an error occurs and the error message is displayed.

For explanations of error messages, see Error Messages and Problem Categories (section 4.5).

Quitting the test

At the screen shown below, simultaneously press the ALT and X keys.



Input screen

3. Peripheral Test

Test execution

From the menu screen shown below, be sure to choose the following items and press Enter:

3. Parallel test

4. CD-ROM test

```
1. DIAG on HD(CF-07)
2. DIAG on FD(CF-07)
3. Parallel test
4. CD-ROM test
5. LAN test
6.Wireless LAN test
Q. Quit
Select please [1,2,3,4,5,6,Q]?
```

menu screen

Parallel test

This tests the functions of the parallel port.

1. Only prior to executing the parallel port test should you change the setup contents to those shown below.

[Changing the setup utility]
① Turn on the power.
② When "Panasonic", "Press F2 to enter setup" appears on the screen, press F2.
③ Press "→ " to select Advanced.
④ Press " ↓ " to choose Mode.
⑤ Press Enter, choose Bidirectional, and then press Enter again.
⑥ Press "F10"
⑦ Choose Yes for "Save Configuration changes and exit now?" and press Enter.

2. Connect the parallel loop back jig to the parallel port.
3. Choose Parallel test and press Enter.
4. After the test is finished, return the setup contents to default.

CD-ROM test

This tests the internal CD-ROM drive functions.

Choose CD-ROM test and press Enter.

LAN test

This test checks for existence of LAN device (LAN Port) on CF-07.

Test result : Device ID=2449.

Vender ID=8086

"OK"

Wireless LAN test

This test checks for existance of wireless LAN device on CF-07.

(This test is not executed on wireless communication for CF-VDW07)

If errors occur

For explanations of error messages, see Error Messages and Problem Categories (section 5.5).

4. Test Selection

Starting up the input menu

1. From the menu screen shown below, choose Quit and press Enter.

1. DIAG on HD(CF-07)
2. DIAG on FD(CF-07)
3. Parallel test
4. CD-ROM test
5. LAN test
6.Wireless LAN test
Q. Quit
Select please [1,2,3,4,5,6,Q]?

2. When A: \DIAG appears, input "JDG_07e" and press Enter.

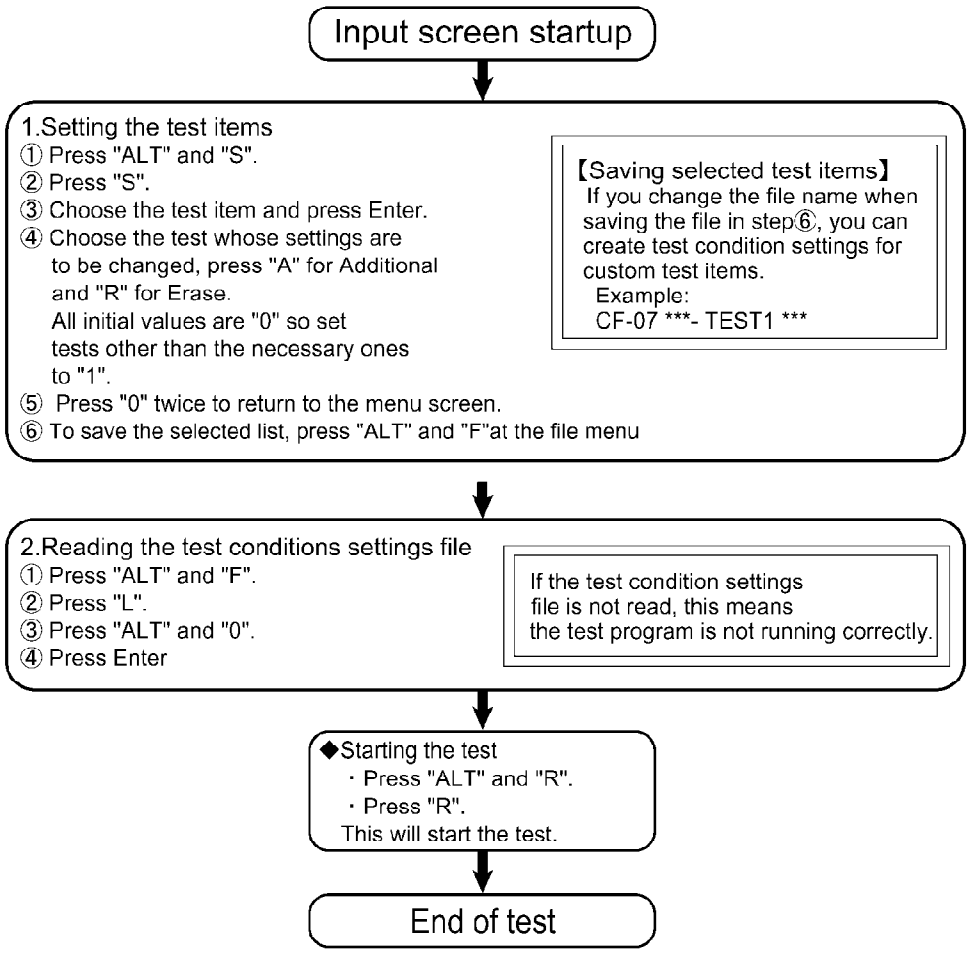
3. The input screen shown below will appear.
   To choose menu items, hold down "ALT" and press the selection key.

Example:

"ALT" + "F" brings up the File menu.

Input screen

Order of test flow selection

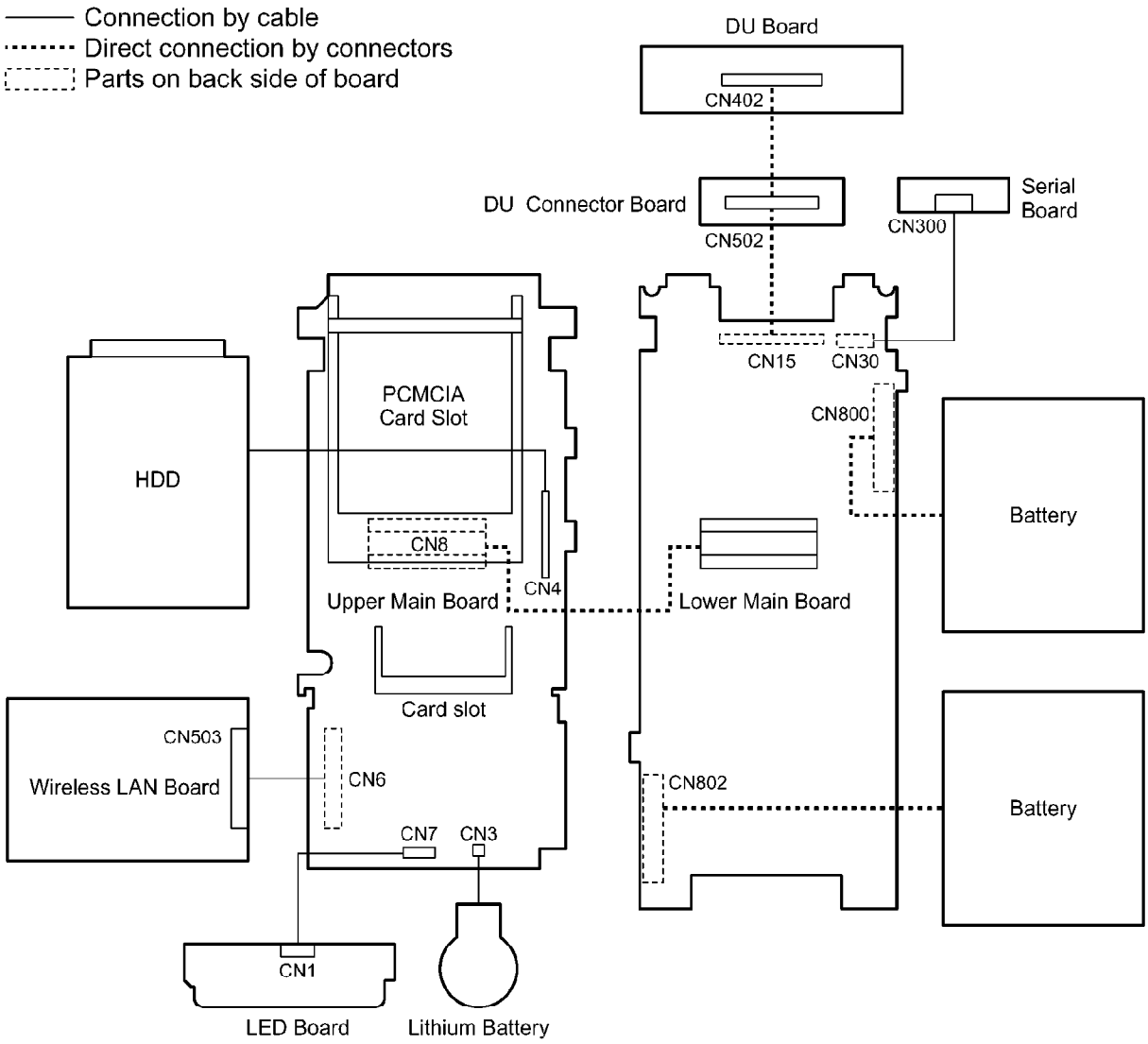

Input screen startup
1.Setting the test items
① Press "ALT" and "S".
② Press "S".
③ Choose the test item and press Enter.
④ Choose the test whose settings are to be changed, press "A" for Additional and "R" for Erase.
All initial values are "0" so set tests other than the necessary ones to "1".
⑤ Press "0" twice to return to the menu screen.
⑥ To save the selected list, press "ALT" and "F"at the file menu
【Saving selected test items】
If you change the file name when saving the file in step⑥, you can create test condition settings for custom test items.
Example:
CF-07 ***- TEST1 ***
2.Reading the test conditions settings file
① Press "ALT" and "F".
② Press "L".
③ Press "ALT" and "0".
④ Press Enter
If the test condition settings file is not read, this means the test program is not running correctly.
◆Starting the test
・Press "ALT" and "R".
・Press "R".
This will start the test.
End of test

5. Error Messages and Troubleshooting

The table below explains the parts that may be faulty or damaged should an error message occur while performing the various test items of the self diagnostics program.

	Test classification	Screen display test items	Contents	Possible damaged or faulty part
1	CPU (CPU related)	A20 GATE TEST	Address 20 line	Main board
2		CACHE ON/OFF	Cache memory on/off	
3		NPU OPERAND TEST	Floating point processor function	
4	RAM (Memory related)	RAM STANDARD	Memory standard	Main board
5	CONTROL (Control ICs on the main board, etc.)	DMA PAGE REG TEST	DMA page register	Main board
6		DMA REGISTER TEST	DMA register	
7		DMAC Transfer TEST	DMA transfer test	
8		PIC HALT INSTRUCTION TEST	Interrupt controller	
9		PIC REGISTER TEST	Interrupt controller	
10		RTC CMOS RAM TEST	Real time clock CMOS	
11				
12		SPEAKER TEST	Speaker	
13		PIT CH0 TEST	Interrupt timer CH0	
14		PIT CH1 TEST	Interrupt timer CH1	
15		PIT CH2 TEST	Interrupt timer CH2	
16	I0 (Input-output)	KEYBOARD REG TEST	Keyboard	Main board
17		PS/2 MOUSE REG	Mouse	Main board
18	Communication	SERIAL WRAP TEST	Serial loop back (jig required)	Main board
19		SERIAL ALL INTERNAL TEST	Serial port	Main board
20		PARALLEL REGISTER R/W	Parallel register	Main board
21	AUX (Auxiliary functions)	PCIC ALL TEST	PCIC	Main board
		Card Bus REG	Card Bus port	Main board
		USB REG	USB port	Main board
22	VIDEO (Display related)	VGA ALL TEST	VGA	LCD, main board, cable
23		SVGA RAM TEST	SVGA RAM	Main board
24		VESA MODE TEST	VESA mode	LCD, main board, cable, connector
25	DISK (FDD, HDD)	FD WT/RD/WP TEST	FD write/read/write protection	FD, cable, main board
26		HDD ALL TEST	Only HDD lead selected	HDD, main board, cable, connector
27	UNIQUE (Individual functions)	ECP REGISTER R/W	Parallel port	Main board, cable, connector
28		EPP REGISTER R/W	Parallel port	Main board, cable, connector
29		EXT. CMOS R/W TEST	Extension CMOS	Main board

14 Wiring Connection Diagram



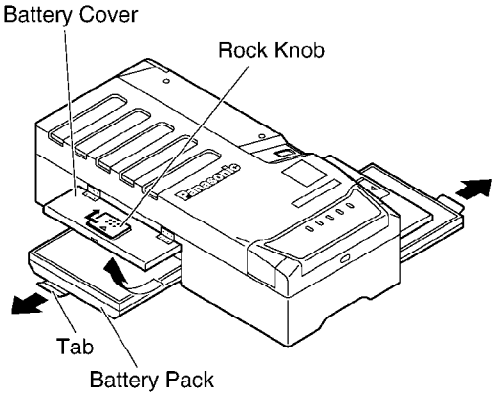
15 Disassembly/Reassembly

<A torque for tightening screws>

Please refer to the torque described on Exploded View.

1. Removing the Battery Packs

1. Slide the battery cover lock knob back and open the battery cover.
2. Remove the 2 battery packs.

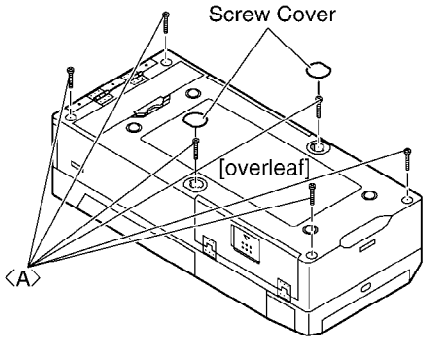


2. Removing the Top Cabinet

1. Remove the screw covers.
2. Remove the 6 screws<A>.

Screw

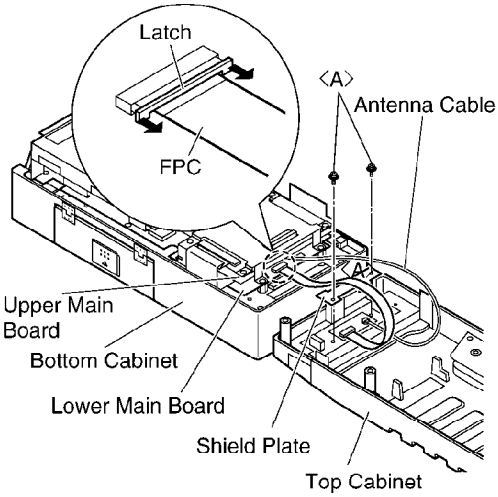
<A>:DXSB2+10FZL



3. Remove the top cabinet from the bottom cabinet.
4. Open the connector latch on the mainboard and remove the flexible cable.
5. Remove the 2 screws.
6. Disconnect the antenna cable from the LED board.

Screw

<A>:XYN2+J5FN

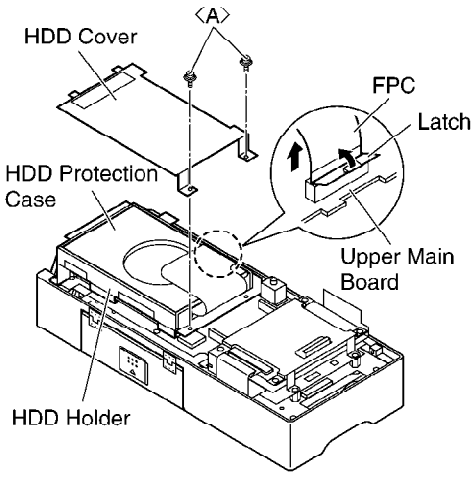


3. Removing the HDD Block

1. Open the connector latch and remove the flexible cable.
2. Remove the 2 screws and release the HDD cover.
3. Remove the HDD from the HDD protection case.
4. Remove the HDD flexible cable.

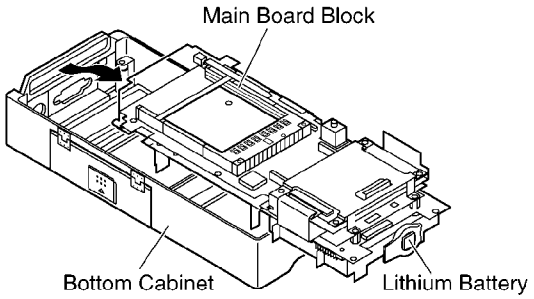
Screw

<A>XYN2+C3



4. Removing the Main Board Block

1. Remove the main board block from the bottom cabinet.



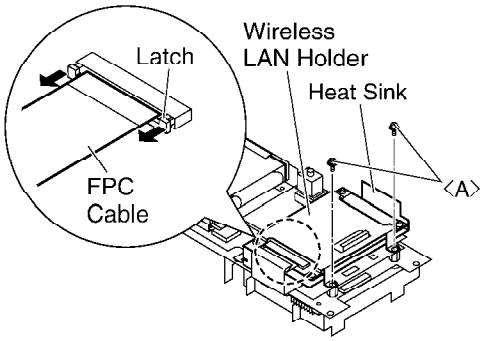
2. Remove the Lithium Battery from the Battery Holder.

4.1. Removing the Wireless LAN Board

1. Remove the 2 screws and release the wireless LAN board block.

Screw

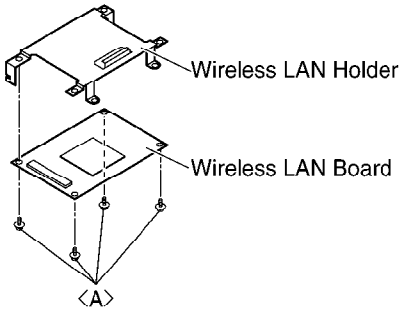
<A>:XYN2+J6FZ



2. Remove the 4 screws and release the wireless LAN board.

Screw

<A>:XYN2+J5FN

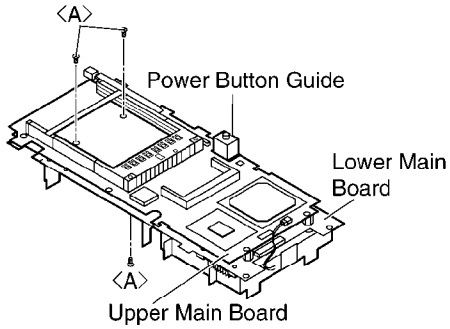


4.2. Removing the Upper Main Board

1. Remove the 3 screws.

Screw

<A>:DFHE5025YA



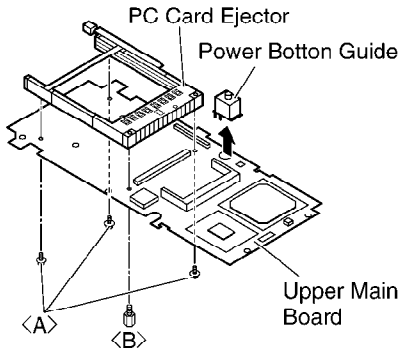
Removing the PC Card Ejector and the Power Button Guide.

1. Remove the 3 screws <A>.
2. Remove the single hexagonal screw <B>.
3. Remove the power botton from the upper main board.

Screw

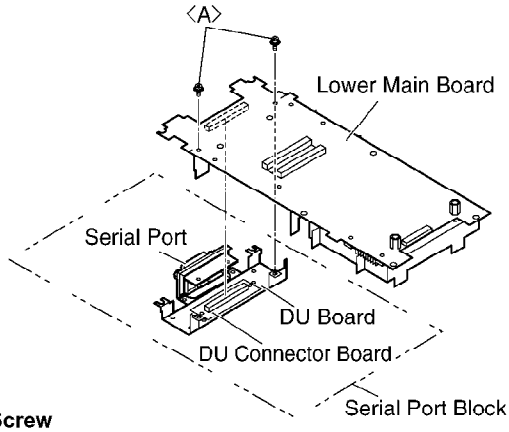
<A>:XYN2+J4FZ

<B>:OXHM0034ZA



4.3. Removing the Serial Port Block

1. Remove the 2 screws.
2. Disconnect the connector.

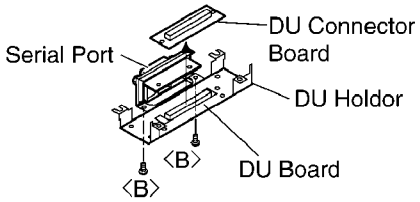


Screw

<A>:XYN2+J6FZ

4.3.1. Removing the DU Connector Board

1. Remove the DU Connector board from the DU board.

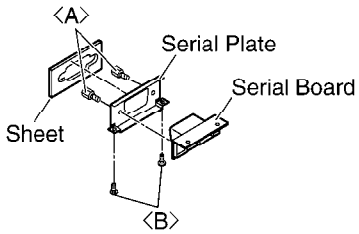


2. Remove the 2 screws <B> and release the sereal plate.
3. Remove the 2 hexagonal screws <C> and release the serial board.

Screw

<B>:XYN2+J6FZ

<C>:DFHE5035ZA

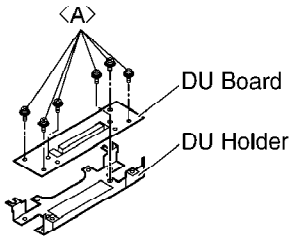


4.3.2. Remove the DU Board

1. Remove the 6 screws <A>.

Screw

<A>:XYN2+J5FZ



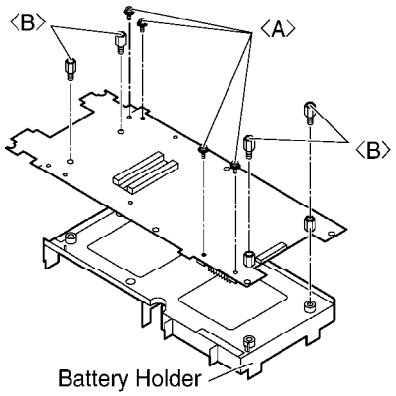
4.4. Removing the Battery Holder

1. Remove the 4 screws <A>.
2. Remove the 4 hexagonal screws <B> and release the Battery Holder.

Screw

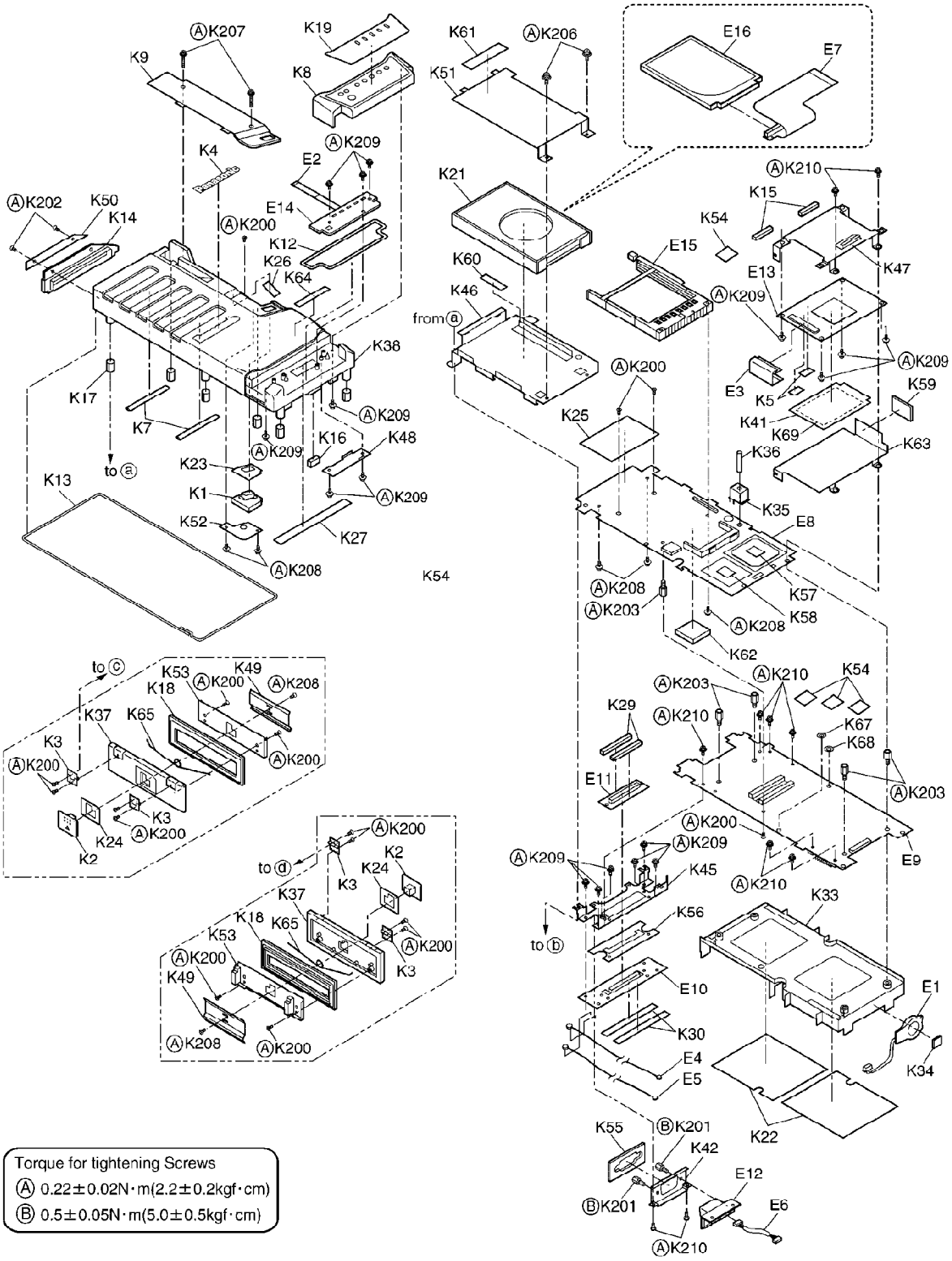
<A>:XYN2+J6FZ

<B>:DXHM00342A

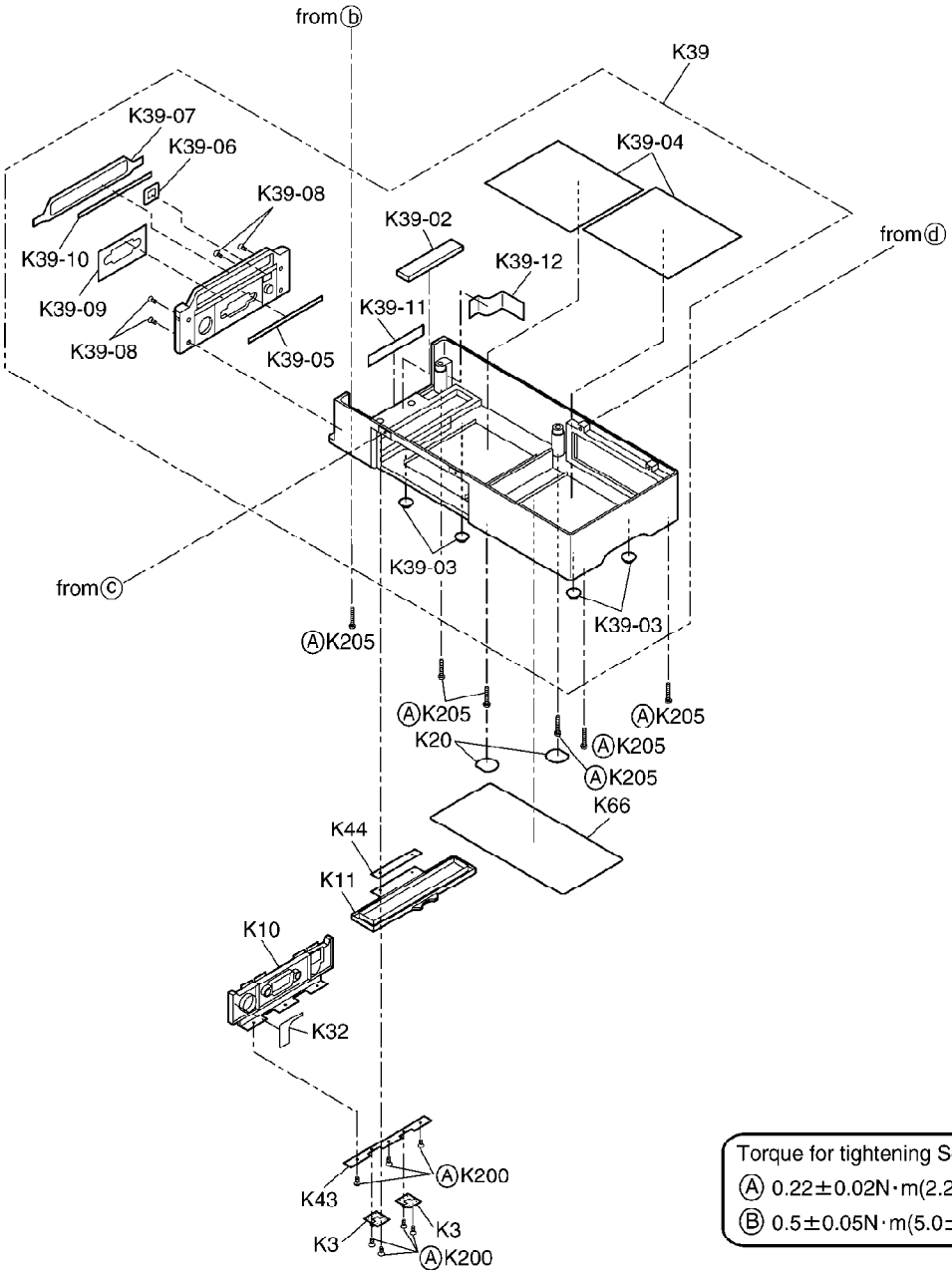


16 Exploded View

1. Exploded View(1/2)



2. Exploded View(2/2)



17 Replacement Parts List Comparison Table

Note: Important Safety Notice
Components identified by⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

CF-07LZ5ZYxM

REF. NO and AREA	PART NO.	DESCRIPTION	Q'TY
Main Block Unit			
E1	BR2330A/SB	BATTERY, RTC	1
E2	DFJE12T080BS	FFC, LED	1
E3	DFJE50T035BS	FPC, LAN	1
E4	DFJS696ZA	CABLE, LAN ANTENNA	1
E5	DFJS697ZA	CABLE, LAN MODULE	1
E6	DFJS701YA	CABLE, SERIAL	1
E7	DFWP0139ZA	CABLE, HDD	1
E8	DL3U17106AAA	PCB, UPPER, MAIN RTL	1
E9	DL3U17107AAA	PCB, LOWER, MAIN RTL	1
E10	DL3U27107AAA	PCB, LOWER, DU RTL	1
E11	DL3U37107AAA	PCB, LOWER, DU CON RTL	1
E12	DL3U47107AAA	PCB, LOWER, SERIAL RTL	1
E13	DL3UP7098AAA	PCB, WIRELESS LAN RTL	1
E14	DL3UP7100AAA	PCB, LED RTL	1
E15	K1YYZZ000031	SLOT, PC CARD EJECT	1
E16 ⚠	N3CZBLH00001	HDD, 5GB	1
Accessories			
A1	DFJP245ZA	CABLE, USB	1
A2	DFQX5265ZA	OPERATING INSTRUCTION MANUAL	1
A3	N4HULPA00001	BATTERY PACK	2
A4	DL3DL9083AAA	ASS'Y, DOUBLE DC-IN CABLE	1
A5	DFQX1392ZA	LEAFLET	1
Packing Material			
P1	DFPE0642ZA	CUSHION	1
P2	DFPK1091ZA	CASE, PACKING	1
Mechanical Parts			
K1	DFBC0275ZA-0	BUTTON, POWER SW	1
K2	DFBC0276ZA-0	KNOB, BATTERY LATCH	2
K3	DFBH1080YA	HINGE	6
K4	DFGB0089ZA-0	BADGE, PANASONIC	1
K5	DFHE0476ZB	SHIELD FORM, WIRELESS LAN	2
K7	DFHE0510ZA	GASKET A	2
K8	DFHG1499ZA	COVER, ANTENNA	1
K9	DFHG1500ZA	HOLDER, ANTENNA	1
K10	DFHG1501ZA	COVER DC IN	1
K11	DFHG1502ZA	COVER, DU	1
K12	DFHG1503ZA	RUBBER, ANTENNA	1
K13	DFHG1504ZA	RUBBER, TOP CABINET	1
K14	DFHG1507ZA	COVER, PCMCIA	1
K15	DFHG1538ZA	RUBBER, CUSHION, LAN	2

K16	DFHG825ZA	SHEET, KENSINTON	1
K17	DFHM0249ZA	PLATE, EARTH	6
K18	DFHR3056YA	SHEET, BATTERY	2
K19	DFHR3057ZA	SHEET, LED	1
K20	DFHR3060YA	SHEET, BOTTOM	2
K21	DFHR3091YA	CUSHION, HDD	1
K22	DFHR3093ZA	SHEET, BATTERY HOLDER	2
K23	DFHR3136ZA	SHEET, POWER SW	1
K24	DFHR3143ZA	SHEET, WATER PROOF, BATTERY LID	2
K25	DFHR3158ZA	SHEET PCMCIA	1
K26	DFHR3159ZA	SHEET, TOP CASE	1
K27	DFHR3160ZA	SHEET, FFC HOLDER	1
K29	DFHR3169ZA	SPACER, STACK PCB	2
K30	DFHR3170ZA	SHEET, DU	2
K32	DFHR3194ZA	SHEET, DC IN	1
K33	DFHR5908ZA-0	HOLDER, BATTERY COVER	1
K34	DFHR5966ZA	CUSHION, RTC BATT	1
K35	DFKE0647ZA-0	GUIDE, POWER SW	1
K36	DFKE0648ZA-0	SHAFT, SWITCH	1
K37	DFKK0031ZA-0	BATTERY COVER	2
K38	DFKM0399ZA-0	TOP CABINET	1
K39	DFWV80C0436	ASS'Y, BOTTOM CABINET	1
K39-02	DFHE0511ZA	GASKET B	1
K39-03	DFHG934ZA	RUBBER, FOOT	4
K39-04	DFHR3061XA	SHEET, BATTERY	2
K39-05	DFHR3139ZA	SHEET, FRONT	1
K39-06	DFHR3141ZA	SHEET, USB	1
K39-07	DFHR3152XA	SHEET, PCMCIA	1
K39-08	DFHE5025YA	SCREW	4
K39-09	DFHR3163ZA	SHEET, SERIAL	1
K39-10	DFHR3178ZA	SHEET A, PCMCIA	1
K39-11	DFMC0703ZA	SHEET, SHIELD	1
K39-12	DFHE0358ZA	GASKET	1
K41	DFMD7785ZA	PLATE, LCD WIRELESS SHIELD	1
K42	DFMD7795ZA	PLATE, PC SERIAL	1
K43	DFMD7796ZA-0	PLATE 1, DU	1
K44	DFMD7797ZA-0	PLATE 2, DU	1
K45	DFMD7819ZA	HOLDER, DU	1
K46	DFMD7820ZA	HOLDER, HDD	1
K47	DFMD7821ZA	HOLDER, LAN	1
K48	DFMD7822ZA	PLATE, WIRELESS SHIELD	1
K49	DFMD7823ZA	LATCH, BATTERY	2
K50	DFMD7824ZA	PLATE, PCMCIA	1
K51	DFMD7825ZA	COVER, HDD	1
K52	DFMD7826ZA	PLATE, POWER SW	1
K53	DFMD7840YA	HOLDER, BATTERY COVER ASS'Y	2
K54	DFMX0635ZB	SHEET, CABLE	4
K55	DFMX0952ZA	INSULATION SHEET, SERIAL	1
K56	DFMX0953ZA	INSULATION SHEET, DU	1
K57	DFMY0212ZA	SHEET, RADIATION	1
K58	DFMY0248ZA	SHEET, HEAT SINK	1
K59	DFMY0286ZA	SHEET, LAN	1
K60	DFMY0289ZA	SHEET A, THERMAL	1
K61	DFMY0290ZA	SHEET B, THERMAL	1
K62	DFMY0291ZA	SHEET C, THERMAL	1

K63	DFMY3116ZA	HEAT SINK, CPU	1
K64	DFQT9664ZA-1	SEAL, TOUGHBOOK	1
K65	DFUN0063ZB	SPRING, BATTERY COVER	2
K66	DFGT0863ZA-0	INFORMATION LABEL	1
K67	DFMX0974ZA	INSULATION SHEET 1	1
K68	DFMX0975ZA	INSULATION SHEET 2	1
K69	DFQT7097ZA	LABEL, LAN	1
K200	DFHE5025YA	SCREW	23
K201	DFHE5035ZA	SCREW	2
K202	DFHE5104ZA	SCREW	2
K203	DXHM0034ZA	SCREW	5
K205	DXSB2+10FZL	SCREW	6
K206	XYN2+C3	SCREW	2
K207	XYN2+J14FZ	SCREW	2
K208	XYN2+J4FZ	SCREW	7
K209	XYN2+J5FN	SCREW	17
K210	XYN2+J6FZ	SCREW	10
Wireless LAN PCB			
IC505	C1CB00001356	IC, MAC CONTROLLER	1
IC506	C1CB00001357	IC, BASE BAND PROCESSOR	1
IC501 502	C3BBHC000267	IC, SDRAM	2
IC503	C3FBHC000048	IC, FLASH MEMORY	1
Q501	B1CHJB000001	TRANSISTOR	1
IC510	C0CBCAC00011	IC, REGULATOR	1
IC511	C0CBCAC00011	IC, REGULATOR	1
IC518	C1CB00000789	IC, SWITCH	1
IC513	C1CB00001347	IC, LOW NOISE AMP	1
IC509	C1CB00001358	IC, I/Q MODEM	1
IC512	C1CB00001359	IC, RF/IF MIXER	1
IC514	C1CB00001360	IC, POWER AMP	1
C546 547 583 589 607 609 610 611 615 620	ECJ0EB1H102K	CAPACITOR, 50V, 1000pF	10
C534 535 596 599	ECJ0EB1H221K	CAPACITOR, 50V, 220pF	4
C556	ECJ0EB1H392K	CAPACITOR, 50V, 3900pF	1
C622 628	ECJ0EC1H010C	CAPACITOR, 50V, 1pF	2
C637	ECJ0EC1H030C	CAPACITOR, 50V, 3pF	1
C597 598	ECJ0EC1H050C	CAPACITOR, 50V, 5pF	2
C571 577 582 584 585 631 632	ECJ0EC1H070D	CAPACITOR, 50V, 7pF	7
C623 633	ECJ0EC1H0R5C	CAPACITOR, 50V, 0.5pF	2
C536 537	ECJ0EC1H100D	CAPACITOR, 50V, 10pF	2
C528 529 538 540 554 555 562 565 574	ECJ0EC1H101J	CAPACITOR, 50V, 100pF	9
C588 619 634 636	ECJ0EC1H120J	CAPACITOR, 50V, 12pF	4
C532 533	ECJ0EC1H180J	CAPACITOR, 50V, 18pF	2
C601 606	ECJ0EC1H220J	CAPACITOR, 50V, 22pF	2
C563 564	ECJ0EC1H680J	CAPACITOR, 16V, 68pF	2
C559 566 569 572 603	ECST0JZ106R	CAPACITOR, 6.3V, 10µF	5
X501	ENFVH172S80	OSCILLATOR, (748MHz)	1

X502	ENFVH1K2S81	OSCILLATOR, (2104MHz)	1
R556 558 559 561 581 582 596	ERJ2GE0R00X	RESISTOR, 1/16W, 0Ω	7
R588 590	ERJ2GEJ100X	RESISTOR, 1/16W, 10Ω	2
R542 546 568 573 574 575 593 594 597	ERJ2GEJ101X	RESISTOR, 1/16W, 100Ω	9
R566 589	ERJ2GEJ102X	RESISTOR, 1/16W, 1KΩ	2
R569	ERJ2GEJ200X	RESISTOR, 1/16W, 20Ω	1
R576	ERJ2GEJ240X	RESISTOR, 1/16W, 24Ω	1
R577 578	ERJ2RHD112X	RESISTOR, 1/16W, 1.1KΩ	2
R571 579	ERJ2RHD152X	RESISTOR, 1/16W, 1.5KΩ	2
R547 551	ERJ2RHD202X	RESISTOR, 1/16W, 2KΩ	2
R570	ERJ2RKF1152X	RESISTOR, 1/16W, 11.5KΩ	1
R562 563 564 565	ERJ2RKF1240X	RESISTOR, 1/16W, 124Ω	4
R550	ERJ2RKF2871X	RESISTOR, 1/16W, 2.87KΩ	1
R586 587	ERJ2RKF3741X	RESISTOR, 1/16W, 3.74KΩ	2
R552	ERJ2RKF3921X	RESISTOR, 1/16W, 3.92KΩ	1
R553	ERJ2RKF49R9X	RESISTOR, 1/16W, 49.9Ω	1
R557 560	ERJ2RKF5360X	RESISTOR, 1/16W, 536Ω	2
R580	ERJ2RKF6490X	RESISTOR, 1/16W, 649Ω	1
R583	ERJ2RKF82R5X	RESISTOR, 1/16W, 82.5Ω	1
R584 585	ERJ2RKF90R9X	RESISTOR, 1/16W, 90.9Ω	2
R572	ERJ2RKF9531X	RESISTOR, 1/16W, 9.53KΩ	1
C575 576 578 580 581 586 590 591 592 593 594 602 604	F1G1C103A046	CAPACITOR, 16V, 0.01μF	13
C613	F1G1E271A043	CAPACITOR, 25V, 270pF	1
C579	F1G1H3R3A475	CAPACITOR, 50V, 3.3pF	1
C539 542 543 544 545 548 549 550 553 557 558 560 561 567 568 570 573 587 605 608	ICUV1C104KBS	CAPACITOR, 16V, 0.1μF	20
C595	F1H1C683A056	CAPACITOR, 16V, 0.068μF	1
C551	ICUV1E223JBS	CAPACITOR, 25V, 0.022μF	1
C600	F1J1C684A097	CAPACITOR, 16V, 0.68μF	1
C552	ICUV1E224KBA	CAPACITOR, 25V, 0.22μF	1
L519	G1C10NJA0016	INDUCTOR	1
L503	G1C18NJA0016	INDUCTOR	1
L522	G1C1N0ZA0023	INDUCTOR	1
L523	G1C1N8ZA0023	INDUCTOR	1
L501	G1C22NJA0016	INDUCTOR	1
L507	G1C2N2ZA0023	INDUCTOR	1
L513 517	G1C2N2ZA0023	INDUCTOR	2
L505 506 508 509	G1C39NJ00001	INDUCTOR	4
L521	G1C3N3ZA0023	INDUCTOR	1
L524	G1C4N7ZA0023	INDUCTOR	1
L516 525	G1C5N6ZA0023	INDUCTOR	2
L520	G1C6N8JA0016	INDUCTOR	1
L518	G1C8N2JA0016	INDUCTOR	1

FL503	J0C3746B0001	FILTER	1
FL501 502	J0E2457B0004	FILTER	2
L511 512 514 526	J0JCC0000057	FERRITE BEAD	4
CN501	K1QZA1AE0001	CONNECTOR	1
C527 530	ECJ0EB1H102K	CAPACITOR, 50V, 1000pF	2
C541	ECJ0EC1H220J	CAPACITOR, 50V, 22pF	1
C103 106 108 514 519	ECST0JZ106R	CAPACITOR, 6.3V, 10µF	5
R522 523 524 525 543 544 548	ERJ2GE0R00X	RESISTOR, 1/16W, 0Ω	7
R535	ERJ2GEJ101X	RESISTOR, 1/16W, 100Ω	1
R104	ERJ2GEJ102X	RESISTOR, 1/16W, 1KΩ	1
R534	ERJ2GEJ103X	RESISTOR, 1/16W, 10KΩ	1
R506 507 511 514 516 517 518 519	ERJ2GEJ223X	RESISTOR, 1/16W, 22KΩ	8
R502 503 504 505 508 509 510 513 515	ERJ2GEJ473X	RESISTOR, 1/16W, 47KΩ	9
R501 540	ERJ2GEJ561X	RESISTOR, 1/16W, 560Ω	2
R545	ERJ2RHD152X	RESISTOR, 1/16W, 1.5KΩ	1
R536	ERJ2RKF1212X	RESISTOR, 1/16W, 12.1KΩ	1
R537 538	ERJ2RKF1912X	RESISTOR, 1/16W, 19.1KΩ	2
R520 521	ERJ2RKF5621X	RESISTOR, 1/16W, 5.62KΩ	2
R541	ERJ2RKF6190X	RESISTOR, 1/16W, 619Ω	1
R539	ERJ2RKF9760X	RESISTOR, 1/16W, 976Ω	1
C517 518	F1G1C103A046	CAPACITOR, 16V, 0.01µF	2
C101 107 110 501 502 503 504 505 506 507 508 509 510 511 512 513 515 516 520 521 522 523 524 525 526 531	ICUV1C104KBS	CAPACITOR, 16V, 0.1µF	26
L504	G1CR56JA0017	INDUCTOR	1
X503	H1A4405B0002	OSCILLATOR, (44MHz)	1
L7 8 502	DDB5Z031I-L	FERRITE BEAD	3
CN503	K1MN50B00003	CONNECTOR	1
D501	MA2SD1000L	DIODE	1
LED PCB			
LD1 2 3 4 5	SEC1703C	LED	5
LD6 7	SEC2764C	LED	2
SW1	EVQPLHA15	SWITCH, PUSH	1
CN1	K1MN12B00013	CONNECTOR	1
CN2	K1QZA1AE0001	CONNECTOR	1
Upper Main PCB			
Q5	DETC144EETL	TRANSISTOR	1
Q613	UMH2NTN	TRANSISTOR	1
Q3 4 6 7 8	B1GHCFNN0004	TRANSISTOR	5
Q10 611	DETUMC2NTR	TRANSISTOR	2
IC12	DA7S08UT85L0	IC, AND GATE	1
IC10	DA7S04UT85L0	IC, NOT GATE	1

IC20 21	DA7S32UT85L0	IC, OR GATE	2
IC23	DA7W66UT12L0	IC, SWITCH	1
IC4	C1DB00000739	IC, SWITCH	1
IC2	C1DB00000745	IC, TEMPERATURE SENSOR	1
IC5 8	C3ABRG000007	IC, SDRAM	2
IC24	C3FBKC000076	IC, BIOS	1
R622	RR0816P113D	RESISTOR, 1/16W, 11KΩ	1
R637	RR0816P153D	RESISTOR, 1/16W, 15KΩ	1
R636	D0HB683ZA002	RESISTOR, 1/16W, 68KΩ	1
R624	D0HB913ZA004	RESISTOR, 1/16W, 91KΩ	1
RA19 20 21 22 31	DEARA8AJ103M	RESISTOR ARRAY	5
RA32	DEARA8AJ473M	RESISTOR ARRAY	1
RA11 12 13 14 15 16 17 18	DEARA8CJ100M	RESISTOR ARRAY	8
R203	DBT10KC1513P	THERMISTOR	1
R632 633 634 635	DBJ14RR022VM	RESISTOR, 1/4W, 0.022Ω	4
C626	DCUA0J475MBY	CAPACITOR, 6.3V, 4.7μF	1
C622	DCUJ1H103KBL	CAPACITOR, 50V, 0.01μF	1
C48	DCUJ1H222KBL	CAPACITOR, 50V, 2200pF	1
D8	DEDRB715FT7	DIODE	1
Q2	DETU3904T106	TRANSISTOR	1
Q623	2SD1819ARTX	TRANSISTOR	1
D2 3 4 5 6	DEDDA204UT	DIODE	5
D605	B0BC2R100007	DIODE	1
D604	DEDEC31QS03L	DIODE	1
Q630	B1CFGD000003	TRANSISTOR	1
Q614 615 616	DAFDS6670A	TRANSISTOR	3
Q9 607	DASI4880DYT1	TRANSISTOR	2
Q1	DETC114EETL	TRANSISTOR	1
Q626	UMH11NTN	TRANSISTOR	1
Q600 618 621 625	UMH2NTN	TRANSISTOR	4
IC602	C0DBAFH00006	IC, DC/DC CONTROLLER	1
IC600	C0DBEHG00002	IC, REGULATOR	1
IC9	DA7W66UT12L0	IC, BUS SWITCH	1
IC17	C1DB00000479	IC, CARD BUS CONTROLLER	1
IC11	C1DB00000738	IC, LSI	1
IC3	C1DB00000741	IC, CLOCK	1
IC6 7	C3ABRG000007	IC, SDRAM	2
IC13	93LC46BT/SN	IC, EEPROM	1
R605	RR0816P103D	RESISTOR, 1/16W, 10KΩ	1
R201 604	RR0816P113D	RESISTOR, 1/16W, 11KΩ	2
R202	RR0816P1822D	RESISTOR, 1/16W, 18.2KΩ	1
RA25 27 28 29 30	DEARA8AJ103M	RESISTOR ARRAY	5
RA24	DEARA8AJ473M	RESISTOR ARRAY	1
IC18	DA2563A1SX2V	IC, BI-POLAR LINEAR	1
IC19	DA5209BM-X2V	IC, VOLTAGE DETECTOR	1
C51 62	DCSG0GA330RR	CAPACITOR, 4V, 33μF	2
C3 47 135 143	DCSG0GB101RR	CAPACITOR, 4V, 100μF	4
C188	DCSG1AB470RR	CAPACITOR, 10V, 47μF	1
C629 630 631 632	DCUE1C106MBY	CAPACITOR, 16V, 10μF	4
C105 111 113 118 133 138 141 149 157 167 249 251	ECST0JZ106R	CAPACITOR, 6.3V, 10μF	12
C608	ECST1AX226R	CAPACITOR, 10V, 22μF	1

R120	ERJ2GE0R00X	RESISTOR, 1/16W, 0Ω	1
R626 628 630	ERJ2GEJ100X	RESISTOR, 1/16W, 10Ω	3
R5 10 12 36 37 38	ERJ2GEJ102X	RESISTOR, 1/16W, 1KΩ	6
R57 58 59 60 82 83 84 87 89 90 91 95 110 150 159 161 162 166 167 175 186 207 602 644 659	ERJ2GEJ103X	RESISTOR, 1/16W, 10KΩ	25
R88	ERJ2GEJ104X	RESISTOR, 1/16W, 100KΩ	1
R654 658	ERJ2GEJ105X	RESISTOR, 1/16W, 1MΩ	2
R121 122	ERJ2GEJ106X	RESISTOR, 1/16W, 10MΩ	2
R647 652	ERJ2GEJ121X	RESISTOR, 1/16W, 120Ω	2
R45 46	ERJ2GEJ151X	RESISTOR, 1/16W, 150Ω	2
R653 657	ERJ2GEJ474X	RESISTOR, 1/16W, 470KΩ	2
R96	ERJ2GEJ202X	RESISTOR, 1/16W, 2KΩ	1
R100 101	ERJ2GEJ222X	RESISTOR, 1/16W, 2.2KΩ	2
R7 11	ERJ2GEJ241X	RESISTOR, 1/16W, 240Ω	2
R63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 119 206	ERJ2GEJ330X	RESISTOR, 1/16W, 33Ω	20
R8 9	ERJ2GEJ470X	RESISTOR, 1/16W, 47Ω	2
R97 98 102 103 104 105 157 158	ERJ2GEJ472X	RESISTOR, 1/16W, 4.7KΩ	8
R146 147 148 149 645	ERJ2GEJ473X	RESISTOR, 1/16W, 47KΩ	5
R61	ERJ2GEJ181X	RESISTOR, 1/16W, 180Ω	1
R19 30	ERJ3EKF1001V	RESISTOR, 1/16W, 1KΩ	2
R94	ERJ3EKF10R0V	RESISTOR, 1/16W, 10Ω	1
R2	ERJ3EKF1100V	RESISTOR, 1/16W, 110Ω	1
R18 33 39 40 41 43 44 47 56	ERJ3EKF1501V	RESISTOR, 1/16W, 1.5KΩ	9
R93	ERJ3EKF1740V	RESISTOR, 1/16W, 174Ω	1
R24 25 31	ERJ3EKF2001V	RESISTOR, 1/16W, 2KΩ	3
R20 21	ERJ3EKF3000V	RESISTOR, 1/16W, 300Ω	2
R99 111	ERJ3EKF36R5V	RESISTOR, 1/16W, 36.5Ω	2
R6 13	ERJ3EKF56R2V	RESISTOR, 1/16W, 56.2Ω	2
R32	ERJ3GEY0R00V	RESISTOR, 1/16W, 0Ω	1
R661 663	ERJ3GEYJ3R3V	RESISTOR, 1/16W, 3.3Ω	2
R81	ERJ3GEYJ820V	RESISTOR, 1/16W. 82Ω	1
RA23	EXBV8V103JV	RESISTOR ARRAY	1
RA33	EXBV8V473JV	RESISTOR ARRAY	1

C7 8 11 12 15 16 19 20 22 23 24 26 27 28 30 31 32 33 35 36 37 42 54 56 59 60 63 66 69 81 82 86 89 92 94 96 97 100 102 103 104 109 110 112 114 116 119 123 128 129 134 137 140 142 145 148 151 154 159 160 162 166 169 171 172 174 178 183 239 242 243 248 256	F1G1C104A031	CAPACITOR, 16V, 0.1µF	73
C606 625	F1G1H102A401	CAPACITOR, 50V, 1000pF	2
C6 10 14 18 49 55 58 64 67 106 107 108 115 117 120 124 125 132 136 139 144 153 161 195	DCUM1H103ZFL	CAPACITOR, 50V, 0.01µF	24
C226	DCUM1H180JCL	CAPACITOR, 50V, 18pF	1
C130 227	DCUM1H220JCL	CAPACITOR, 50V, 22pF	2
C152 165 170 173	F1G1H8200001	CAPACITOR, 50V, 82pF	4
C600 643 645	DCUM1A1051BD	CAPACITOR, 10V, 1µF	3
C177	ICUV1A105ZFS	CAPACITOR, 10V, 1µF	1
C627	ICUV1C104KBS	CAPACITOR, 16V, 0.1µF	1
C57 61 65	DCUM0J475MBK	CAPACITOR, 6.3V, 4.7µF	3
C649	ICUV1E224KBA	CAPACITOR, 25V, 0.22µF	1
C5 9 13 17 21 25 29 34 252 253 254	ICUV0J106KBX	CAPACITOR, 6.3V, 10µF	11
C4 50 636 637	DCS0ETB331M	CAPACITOR, 2.5V, 330µF	4
L1	MLF2012A4R7K	FERRITE BEAD	1
X1	DECU14318L5U	OSCILLATOR, 14.318MHz	1
X2	IEV0352AA	OSCILLATOR, 32.768KHz	1
C250 257	ICUV1C475ZFX	CAPACITOR, 16V, 4.7µF	2
C267	ICUV1H471JCS	CAPACITOR, 50V, 470pF	1
L2 3 4 5	DDB5Z024E-L	INDUCTOR	4
CN8	K1KAZZA00017	CONNECTOR	1
CN6	K1MN50B00003	CONNECTOR	1
D1	MA729-TX	DIODE	1
D610	B0BC3R000011	DIODE	1
C205 210 212 217 218 222 223 264	ECST0JZ106R	CAPACITOR, 6.3V, 10µF	8
C241	ECST1AX226R	CAPACITOR, 10V, 22µF	1
R106 107 124 137178 179	ERJ2GE0R00X	RESISTOR, 1/16W, 0Ω	6
R3 629	ERJ2GEJ100X	RESISTOR, 1/16W, 10Ω	2
R183	ERJ2GEJ101X	RESISTOR, 1/16W, 100Ω	1

R1 14 17 115 127 128 177	ERJ2GEJ102X	RESISTOR, 1/16W, 1KΩ	7
R16 108 109 116 151 155 156 170 176 180 181 204 205 623 627	ERJ2GEJ103X	RESISTOR, 1/16W, 10KΩ	15
R123 199 616	ERJ2GEJ104X	RESISTOR, 1/16W, 100KΩ	3
R198 619	ERJ2GEJ105X	RESISTOR, 1/16W, 1MΩ	2
R138 139 140 141 142 143 144 145	ERJ2GEJ153X	RESISTOR, 1/16W, 15KΩ	8
R15	ERJ2GEJ241X	RESISTOR, 1/16W, 240Ω	1
R129	ERJ2GEJ270X	RESISTOR, 1/16W, 27Ω	1
R130 131 132 133 134 135 136	ERJ2GEJ270X	RESISTOR, 1/16W, 27Ω	7
R188 189 190 191 192 193 194 195 196 197	ERJ2GEJ680X	RESISTOR, 1/16W, 680Ω	10
R184 185	ERJ2GEJ473X	RESISTOR, 1/16W, 47KΩ	2
R27	ERJ3EKF2000V	RESISTOR, 1/16W, 200Ω	1
R26	ERJ3EKF3010V	RESISTOR, 1/16W, 301Ω	1
R92	ERJ3EKF36R5V	RESISTOR, 1/16W, 36.5Ω	1
R662	ERJ3GEYJ3R3V	RESISTOR, 1/16W, 3.3Ω	1
SW1	EVQPLHA15	SWITCH, PUSH	1
RA4 9	EXBV8V100JV	RESISTOR ARRAY	2
RA1 2 3 5 6 7 8 10	EXBV8VR000V	RESISTOR ARRAY	8
C52 95 101 176 180 182 186 187 194 196 197 198 199 200 201 202 204 206 208 214 215 220 221 224 225 240 245 246 247 255 265	F1G1C104A031	CAPACITOR, 16V, 0.1μF	31
C258 259 260 261 621	DCUM1H101JCL	CAPACITOR, 50V, 100pF	5
C203 207 209 211 213 216 219 262 263	DCUM1H103ZFL	CAPACITOR, 50V, 0.01μF	9
C231 232 233 234 235 236 237 238 624 639	DCUM1H470JCL	CAPACITOR, 50V, 47pF	10
C229 230 648	DCUM1A1051BD	CAPACITOR, 10V, 1μF	3
C175 179 181 184 185	ICUV1A105ZFS	CAPACITOR, 10V, 1μF	5
C228 266 615	ICUV1E473KBS	CAPACITOR, 25V, 0.047μF	3
C628	ICUV1E224KBA	CAPACITOR, 25V, 0.22μF	1
C633 634	DCS0ETB331M	CAPACITOR, 2.5V, 330μF	2
L602	DDAZS1R8MTZE	COIL, POWER INDUCTOR	1

L6	DDB5Z031J-L	FERRITE BEAD	1
CN3	DFJP201ZA002	CONNECTOR	1
CN2	K1MME4B00017	CONNECTOR, DIMM	1
CN7	K1MN12B00013	CONNECTOR	1
CN4	FH12-50S05SV	CONNECTOR	1
CN5	DFJP213ZB068	CONNECTOR, CARD BUS	1
D7 603	MA729-TX	DIODE	2
Lower Main PCB			
D7 803 818 821	DED1SS400T61	DIODE	4
D800 801 802 809 810 811	DEDDA204UT	DIODE	6
D805	B0BC01400019	DIODE	1
D842 843	B0BC2R100007	DIODE	2
D827	HZU5BLLTRF	DIODE	1
D600 602	EC10QS04TL	DIODE	2
D815	DEDEC31QS03L	DIODE	1
D831 832	DEDRB081L20	DIODE	2
D841	DEDSPB64SVR	DIODE	1
Q873	B1CFGD000003	TRANSISTOR	1
Q603 608 812 815	B1DFED000012	TRANSISTOR	4
Q808 809 817 818	DASI6463DQT2	TRANSISTOR	4
Q17 831 833 851 852 855 856	DASI6415DQT1	TRANSISTOR	7
Q866	UMH11NTN	TRANSISTOR	1
Q19 842	DETC114YETL	TRANSISTOR	2
Q843	DETC144EETL	TRANSISTOR	1
Q18	DETA114EETL	TRANSISTOR	1
Q800 801 821 832 841 859 874 880	UMH2NTN	TRANSISTOR	8
Q846	DETUMC2NTR	TRANSISTOR	1
IC804	XC62FP3302PR	IC, REGULATOR	1
IC601	C0DBAGH00017	IC, DC/DC CONVERTER	1
IC802	DAC1624CS8XU	IC, RF DC/DC CONVERTER	1
IC801	C0DBAZZ00039	IC, DC/DC CONVERTER	1
IC803	C0DBDJH00006	IC, CHARGER	1
IC30 31	DAPST9125NXT	IC, BI-POLAR LINEAR	2
IC29	DAPST9140NXT	IC, BI-POLAR LINEAR	1
IC39 40	DA7W53UT12L0	IC, SWITCH	2
IC809	DA7S14UT85L0	IC, INVERTER	1
IC45	DA7W14UT12L0	IC, INVERTER	1
R606	RR0816P103D	RESISTOR, 1/16W, 10KΩ	1
R621	RR0816P133D	RESISTOR, 1/16W, 13KΩ	1
R607	RR0816P203D	RESISTOR, 1/16W, 20KΩ	1
R862 866	RR0816P333D	RESISTOR, 1/16W, 33KΩ	2
R865	DBJ3GD7502VM	RESISTOR, 1/16W, 75KΩ	1
R867	RR0816P1822D	RESISTOR, 1/16W, 18.2KΩ	1
R882 883	RL1220SR22F	RESISTOR, 1/4W, 0.22Ω	2
R809	RL1220SR47F	RESISTOR, 1/4W, 0.47Ω	1
RA33 44 45	DEARA8AJ102M	RESISTOR ARRAY	3
RA35 38	DEARA8AJ103M	RESISTOR ARRAY	2
RA34 41	DEARA8AJ473M	RESISTOR ARRAY	2
R840	DBJ14RR033VM	RESISTOR, 1/4W, 0.033Ω	1

R842 854 855	DBJ14RR033VM	RESISTOR, 1/4W, 0.033Ω	3
C298	DCUA0J475MBY	CAPACITOR, 6.3V, 4.7μF	1
C803 832 833 835 852 853 854	DCUE1C106MBY	CAPACITOR, 16V, 10μF	7
C801 840 841	DCUJ1H103KBL	CAPACITOR, 50V, 0.01μF	3
Q802 822 837	2SD1819ARTX	TRANSISTOR	3
D806 807 819 820 822 829 830 833 834	DED1SS400T61	DIODE	9
D823	B0BC3R700001	DIODE	1
D824 825	B0BC5R000009	DIODE	2
D804	B0BC8R100004	DIODE	1
D812 814	EC10QS04TL	DIODE	2
D817	DEDEC31QS03L	DIODE	1
Q823 825	DAFDV301N	TRANSISTOR	2
Q631	DAFDN360P	TRANSISTOR	1
Q632 828 871 875	B1CFGD000003	TRANSISTOR	4
Q824	DASI6410DQT1	TRANSISTOR	1
Q829	B1DFED000012	TRANSISTOR	1
Q844	DASI4953DYT1	TRANSISTOR	1
Q857 858 860	DASI6463DQT2	TRANSISTOR	3
Q805 807	DASI6415DQT1	TRANSISTOR	2
Q16	DETC114EETL	TRANSISTOR	1
Q838 839	UMH11NTN	TRANSISTOR	2
Q847 848 849 850 853 854	DETC144EETL	TRANSISTOR	6
Q600 601 803 804 810 811 819 820 826 834 835 836 840 861 865 867 870 876 877 878 879 881 882	UMH2NTN	TRANSISTOR	23
Q827	DETUMC2NTR	TRANSISTOR	1
IC43	DALP298030N	IC, BI-POLAR LINEAR	1
IC14	C0DBZHG00004	IC, USB POWER CONTROL	1
IC808 811	C0EBK0000021	IC, VOLTAGE DETECTOR	2
IC21	DA7S04UT85L0	IC, NOT GATE	1
IC47	DA7S00UT85L0	IC, NAND GATE	1
IC810 812	DA7W02UT12L0	IC, NOR GATE	2
IC24	DA7S32UT85L0	IC, OR GATE	1
IC805 806	TC7W74FUTE	IC, FLIP-FLOP	2
IC32 33	DA7W14UT12L0	IC, CMOS	2
IC48	DA3125QXX1T	IC, MOS LOGIC	1
IC22 23 26 27 28 49	DA5C3384CX1T	IC, BUS SWITCH	6
IC19	C1DB00000742	IC, RS232C TRANSCEIVER /RECEIVER	1
IC18	C1DB00000743	IC, SUPER I/O	1
IC20	DA38802M280M	IC, KBC	1
IC42	C2CBHF000187	IC, EC	1
R861	LTR0049	RESISTOR, 1/16W, 100Ω	1
R907 954	RR0816P103D	RESISTOR, 1/16W, 10KΩ	2

R908 952	D0HB154ZA002	RESISTOR, 1/16W, 150KΩ	2
R829 830 831	RL1220SR22F	RESISTOR, 1/4W, 0.22Ω	3
R964 965	RL1220SR47F	RESISTOR, 1/4W, 0.47Ω	2
D839	DAN222TL	DIODE	1
D840	DAN222TL	DIODE	1
R863 864	DBJ14RR068VM	RESISTOR, 1/4W, 0.068Ω	2
C233 234	DCSG1AB470RR	CAPACITOR, 10V, 47μF	2
C611	DCUC1C475KBY	CAPACITOR, 16V, 4.7μF	1
C605 607 616 617 811 812 821 824 850 851 888 889	DCUE1C106MBY	CAPACITOR, 16V, 10μF	12
R187 221 223 268 269 286 299 611 875 953 957 958	ERJ2GE0R00X	RESISTOR, 1/16W, 0Ω	12
R228 804 824 828 913 915	ERJ2GEJ102X	RESISTOR, 1/16W, 1KΩ	6
R179 181 185 220 815 917 918 939 947	ERJ2GEJ103X	RESISTOR, 1/16W, 10KΩ	9
R229 601 603 609 660 661 823 827 838 839 851 852 898 920 923	ERJ2GEJ104X	RESISTOR, 1/16W, 100KΩ	15
R834 835 849 850 891 919 922 943	ERJ2GEJ105X	RESISTOR, 1/16W, 1MΩ	8
R892 893 894	ERJ2GEJ121X	RESISTOR, 1/16W, 120Ω	3
R860	ERJ2GEJ223X	RESISTOR, 1/16W, 22KΩ	1
R877	ERJ2GEJ330X	RESISTOR, 1/16W, 33Ω	1
R183	ERJ2GEJ473X	RESISTOR, 1/16W, 47KΩ	1
R819 820 889 909 910 950 955	ERJ2GEJ473X	RESISTOR, 1/16W, 47KΩ	7
R826 890 911 912 914 916 932 944 949 887 888	ERJ2GEJ474X	RESISTOR, 1/16W, 470KΩ	11
R878 879	ERJ2GEJ4R7X	RESISTOR, 1/16W, 4.7Ω	2
R298	ERJ3EKF3901V	RESISTOR, 1/16W, 3.9KΩ	1
R610	ERJ3GEYJ200V	RESISTOR, 1/16W, 20Ω	1
RA37	EXBV8V104JV	RESISTOR ARRAY	1
CA1 2	EZASCE101M	CAPACITOR ARRAY	2
C263 266 268 281 304	F1G1C104A031	CAPACITOR, 16V, 0.1μF	5
C338 340 342	DCUM1H101JCL	CAPACITOR, 50V, 100pF	3
C280 829	F1G1H102A401	CAPACITOR, 50V, 1000pF	2
C231232 302	DCUM1H103ZFL	CAPACITOR, 50V, 0.01μF	3

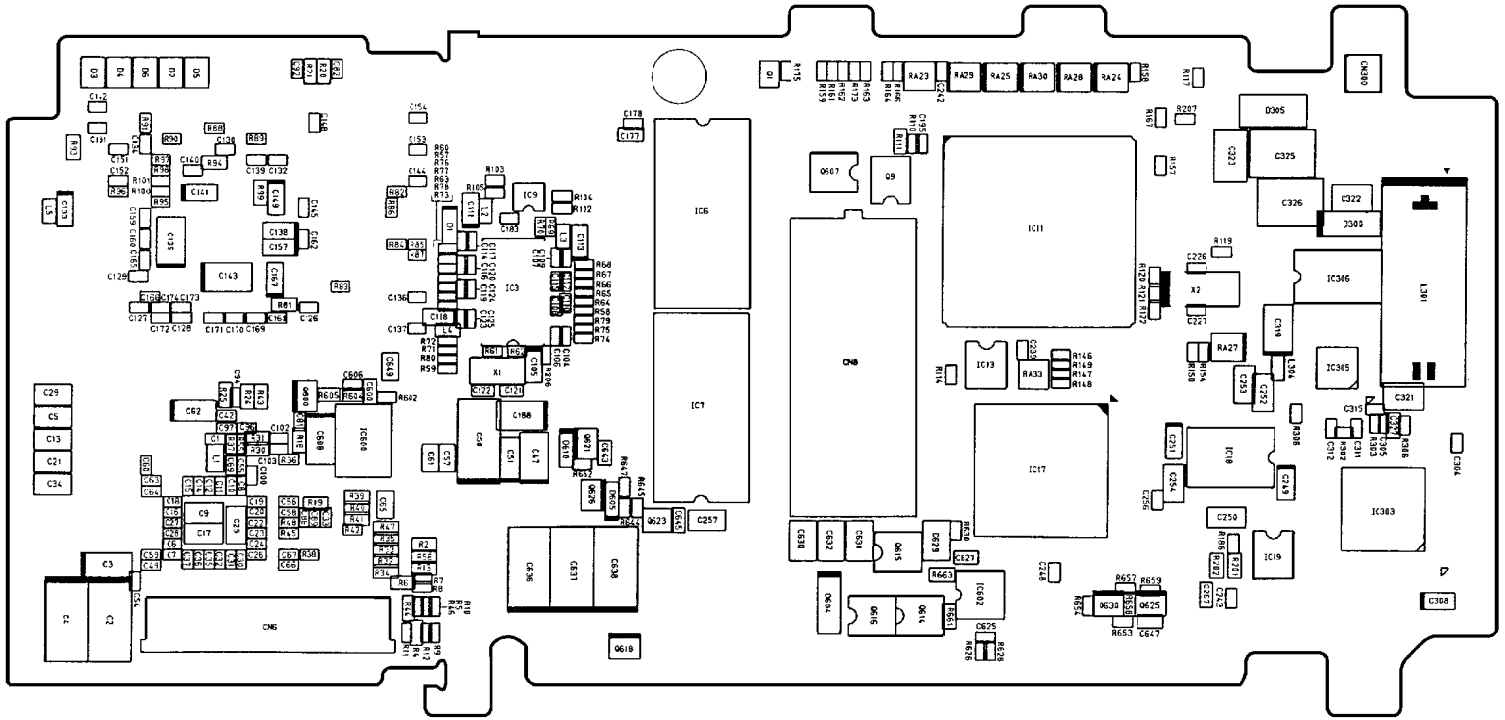
C603 612 844 845 858 878 879 880 881 885	DCUM1A1051BD	CAPACITOR, 10V, 1µF	10
C259 260 261 262 883 884	ICUV1C104KBS	CAPACITOR, 16V, 0.1µF	6
C807 808 822 823 864 866	ICUV1E473KBS	CAPACITOR, 25V, 0.047µF	6
C601 620 804 816 826 856 857 873	ICUV0J106KBX	CAPACITOR, 6.3V, 10µF	8
L802	G1A160H00001	INDUCTOR	1
L803	DDAZS220MT3T	FERRITE BEAD	1
L600	G1A6R8GA0008	COIL, POWER CHOKE	1
LA1	DDB8Z054A-T	FERRITE BEAD	1
L601 800 801	DDAZS100MT3T	FERRITE BEAD	3
C267	ICUV1H101JCS	CAPACITOR, 50V, 100pF	1
L9 10 11 12	DDB5Z024E-L	INDUCTOR	4
L8	DDB5Z031J-L	INDUCTOR	1
CN501	K1KAC0A00036	CONNECTOR	1
CN8	DFJP092ZA240	CONNECTOR, PLUG	1
F802 ⚠	451004	FUSE, 125V, 4A	1
D611 844 845 846	MA729-TX	DIODE	4
C257 294	ECST0JZ106R	CAPACITOR, 6.3V, 10µF	2
LA800 801	ELKE103FA	FERRITE BEAD ARRAY	2
R189 225 281 283 300 614 844 846 847	ERJ2GE0R00X	RESISTOR, 1/16W, 0Ω	9
R871	ERJ2GEJ100X	RESISTOR, 1/16W, 10Ω	1
R194 195 196 801 802 803 816 817 818	ERJ2GEJ101X	RESISTOR, 1/16W, 100Ω	9
R273 275 279 805 808 810 811 812 876 886 929 931	ERJ2GEJ102X	RESISTOR, 1/16W, 1KΩ	12
R217 218 293 294 807 858 902 938	ERJ2GEJ103X	RESISTOR, 1/16W, 10KΩ	8
R190 192 227 230 231 235 237 238 239 806 848 897 900 921 928	ERJ2GEJ104X	RESISTOR, 1/16W, 100KΩ	15
R924 937 941 945 946	ERJ2GEJ105X	RESISTOR, 1/16W, 1MΩ	5
R934 936	ERJ2GEJ121X	RESISTOR, 1/16W, 120Ω	2
R224	ERJ2GEJ122X	RESISTOR, 1/16W, 1.2KΩ	1
R608	ERJ2GEJ124X	RESISTOR, 1/16W, 120KΩ	1
R617	ERJ2GEJ184X	RESISTOR, 1/16W, 180KΩ	1
R880 881	ERJ2GEJ1R0X	RESISTOR, 1/16W, 1Ω	2

R859	ERJ2GEJ223X	RESISTOR, 1/16W, 22KΩ	1
R233	ERJ2GEJ332X	RESISTOR, 1/16W, 3.3KΩ	1
R274 278 280	ERJ2GEJ333X	RESISTOR, 1/16W, 33KΩ	3
R219	ERJ2GEJ471X	RESISTOR, 1/16W, 470Ω	1
R182 191 193 800 813 814 822 825 868 951 961 962	ERJ2GEJ473X	RESISTOR, 1/16W, 47KΩ	12
R885 901 930 935 942 948	ERJ2GEJ474X	RESISTOR, 1/16W, 470KΩ	6
R896	ERJ2GEJ822X	RESISTOR, 1/16W, 8.2KΩ	1
R295 296 297	ERJ3EKF75R0V	RESISTOR, 1/16W, 75Ω	3
C241 258 269 271 272 273 274 286 287 290 291 292 297 303 305 306 337 339 341	F1G1C104A031	CAPACITOR, 16V, 0.1μF	19
C828	DCUM1H101JCL	CAPACITOR, 50V, 100pF	1
C278 279 813 815 817 818 875 876	F1G1H102A401	CAPACITOR, 50V, 1000pF	8
C293 820 839 843 874 877 882	DCUM1A1051BD	CAPACITOR, 10V, 1μF	7
C240 242 275 276 277	ICUV1A105ZFS	CAPACITOR, 10V, 1μF	5
C289 855 859 861 862 863 868	ICUV1C104KBS	CAPACITOR, 16V, 0.1μF	7
C865	ICUV1E473KBS	CAPACITOR, 25V, 0.047μF	1
C827	DCUJ1H222KBL	CAPACITOR, 50V, 2200pF	1
C299 610	ICUV1E224KBA	CAPACITOR, 25V, 0.22μF	2
C802 838	DCUA1H105ZFY	CAPACITOR, 50V, 1μF	2
C618 825	DCS0JTA151M	CAPACITOR, 6.3V, 150μF	2
C604 805	DCS1ATA101M	CAPACITOR, 10V, 100μF	2
C834	DCS1ATB221M	CAPACITOR, 10V, 220μF	1
LA2	DDB8Z054A-T	FERRITE BEAD ARRAY, EMI FILTER	1
X3 4	H2D800400012	OSCILLATOR, 8MHz	2
C609 613 814 819 830 842 846 847 848 849	ICUV1E104KBA	CAPACITOR, 25V, 0.1μF	10
C800	ICUV1H221KBS	CAPACITOR, 50V, 220pF	1
L6 7	DDB5Z031J-L	INDUCTOR	2
CN31	K1FB104B0025	CONNECTOR, MINI USB	1
CN800 802	K1KA08A00242	CONNECTOR	2
CN30	K1KA09B00048	CONNECTOR	1
CN401	DFJS553ZA100	CONNECTOR, DOCKING	1
CN15	K1KAC0A00036	CONNECTOR	1
CN18	K1MN30B00010	CONNECTOR, FPC	1
F801 ⚠	451004	FUSE, 125V, 4A	1
F800 ⚠	XBAD4515R00	FUSE, 125V, 5A	1

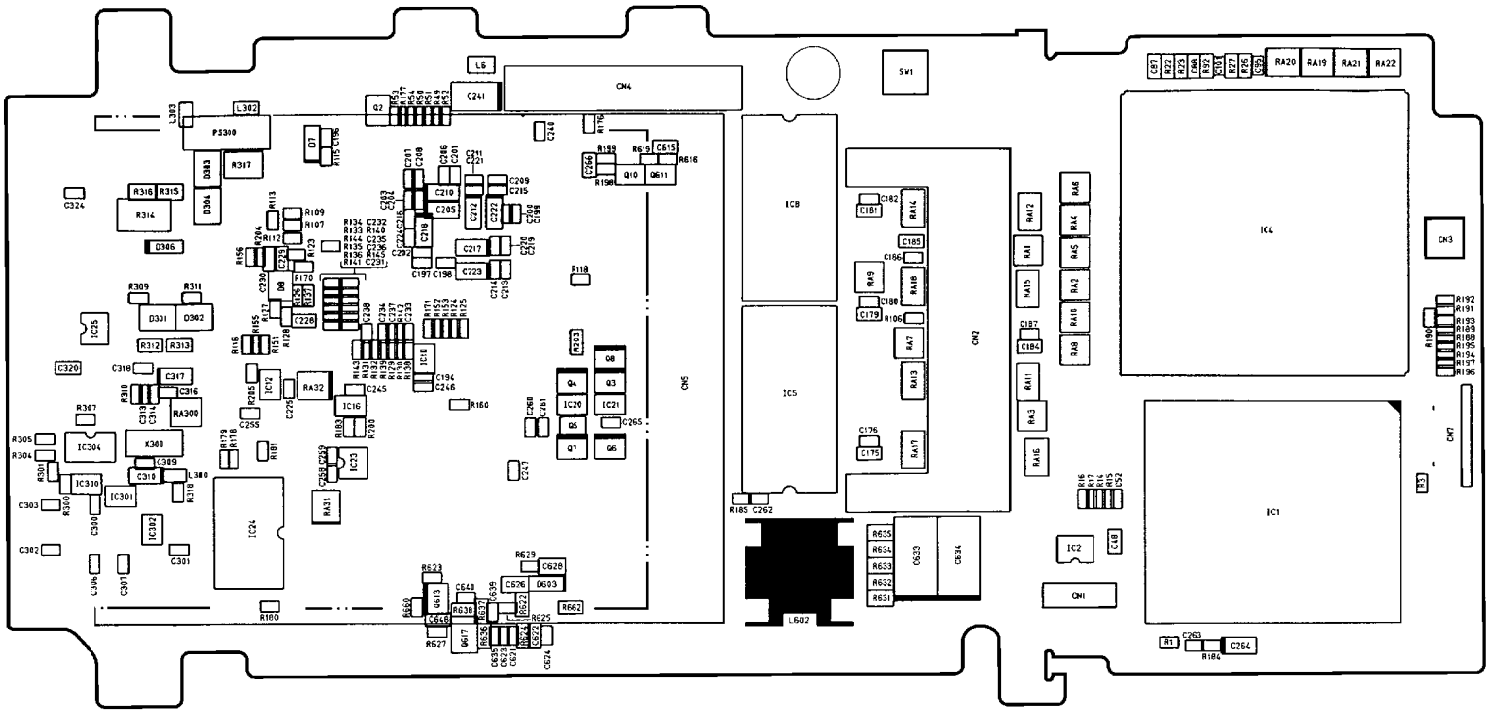
IC44	L0DCBB000002	IC, BEEPER	1
D8 816 828	MA729-TX	DIODE	3
D601 813	MA792WATX	DIODE	2
R620	RR0816P163D	RESISTOR, 1/16W, 16KΩ	1
CN801	IHC0626AA	CONNECTOR	1
Lower DU PCB			
CN402	DFJP106ZA120	CONNECTOR	1
CN403 406	K1QZA1AE0001	CONNECTOR	2
CN405 408	K1ZZ00001158	CONNECTOR	2
CN404 407	K1QZB1AA0020	CONNECTOR	2
Lower DU CON PCB			
CN502	DFJP106ZA120	CONNECTOR	1
Lower Serial PCB			
CN300	K1KA09B00048	CONNECTOR	1
CN301	DFJP236ZA009	CONNECTOR, DSUB	1

CF-07LZ5ZYXM
Printed Circuit Board

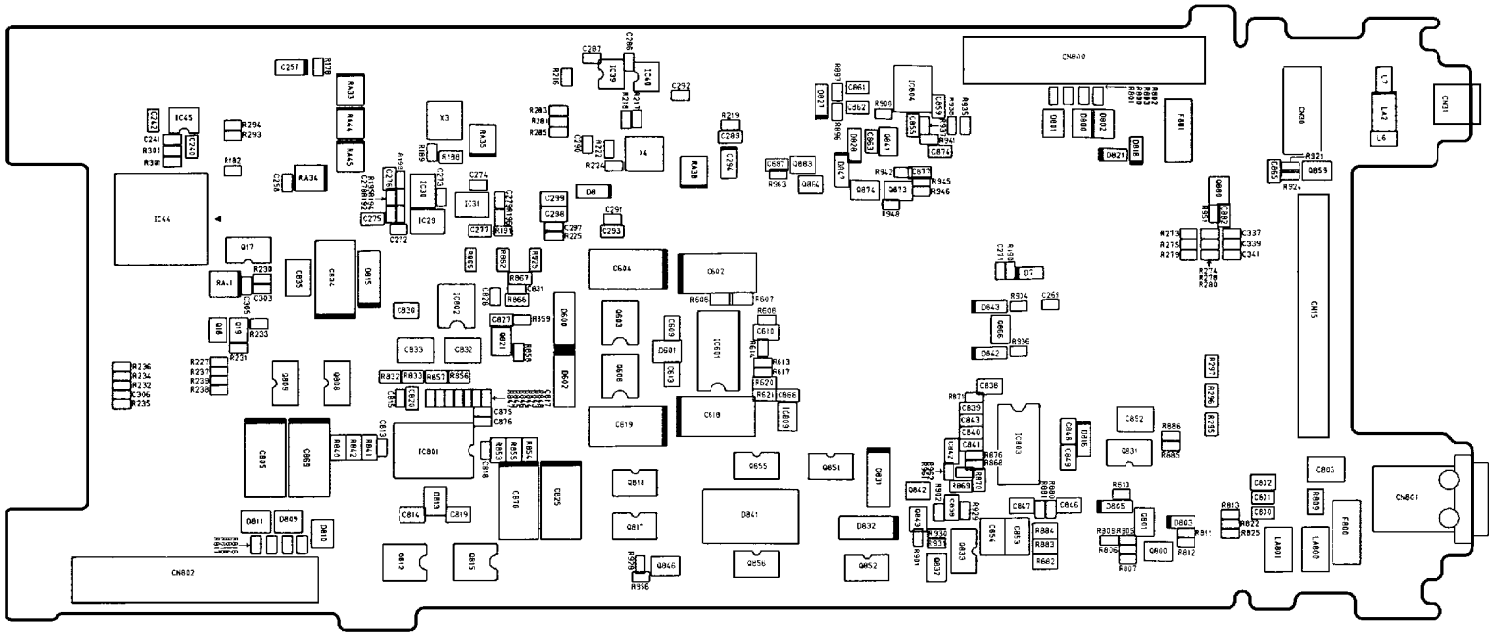
Upper Main PCB<Top View>



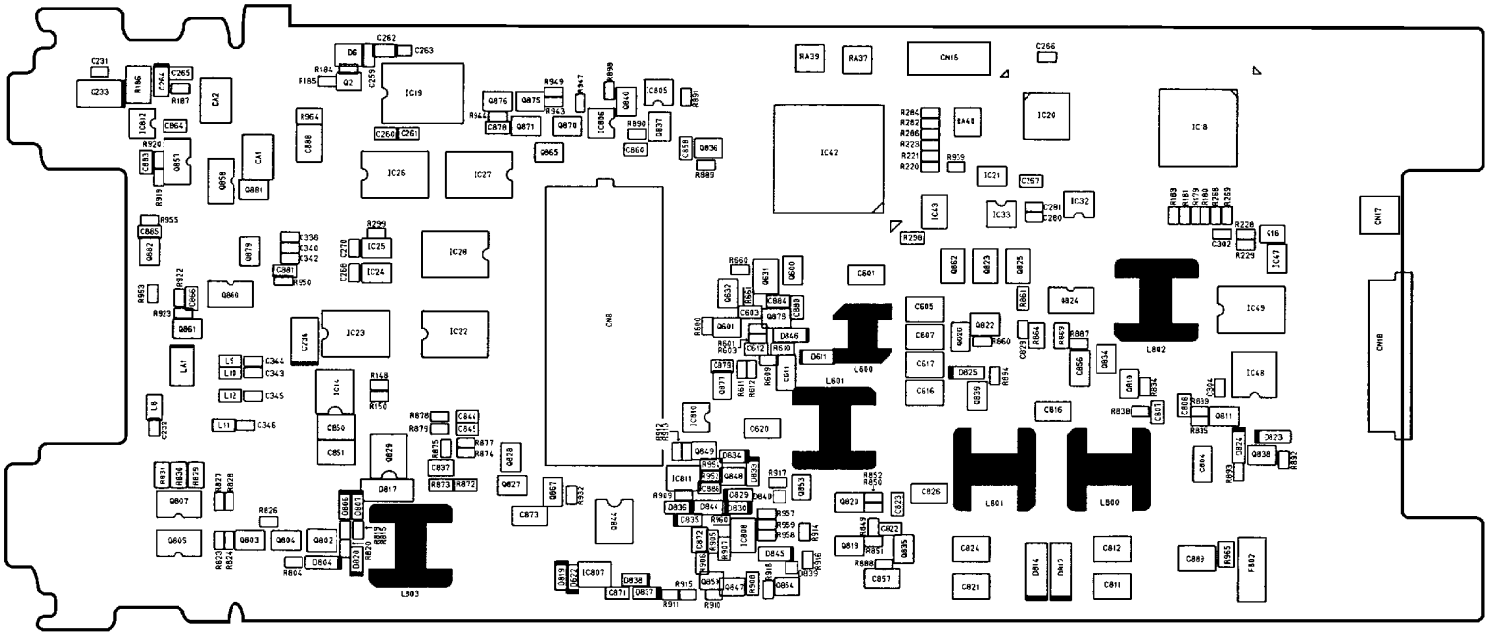
Upper Main PCB<Bottom View>



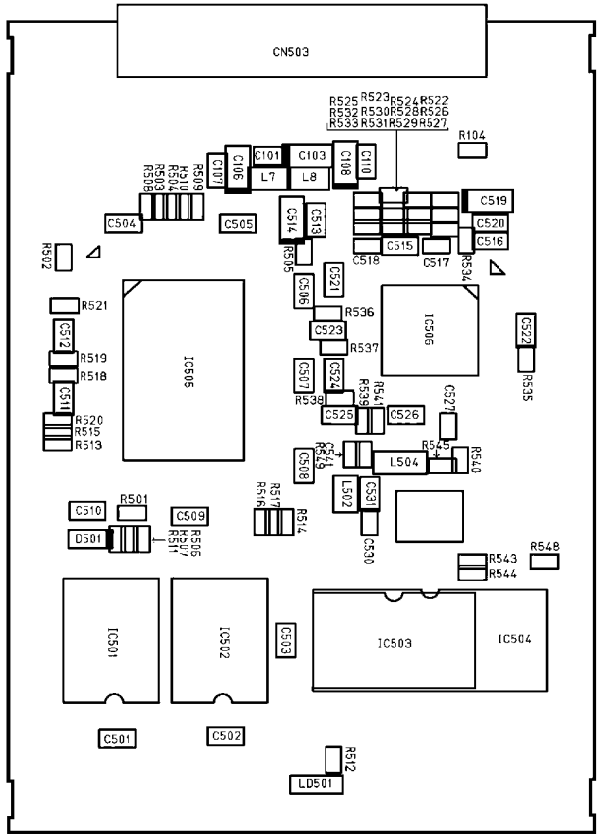
Lower Main PCB<Top View>



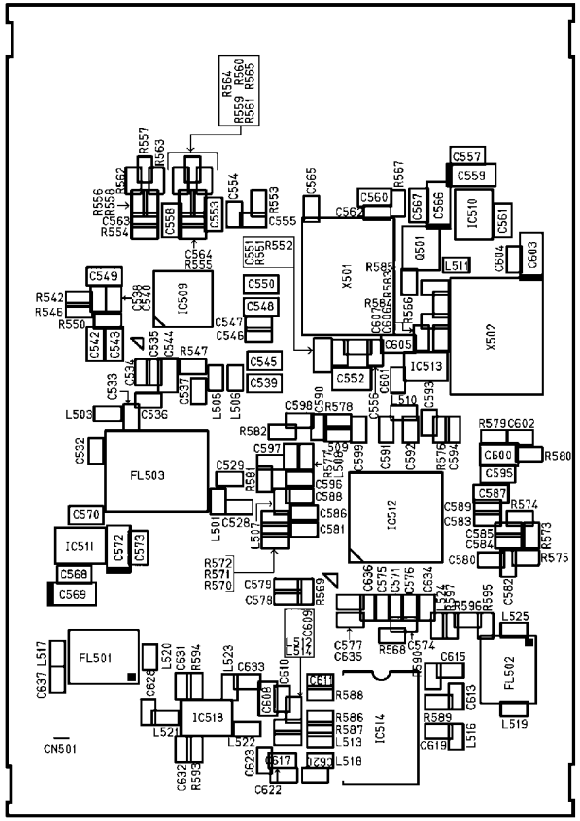
Lower Main PCB<Bottom View>



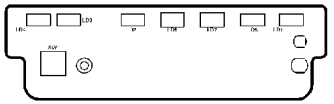
Wireless LAN PCB<Top View>



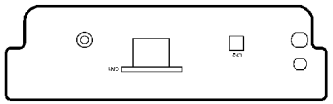
Wireless LAN PCB<Bottom View>



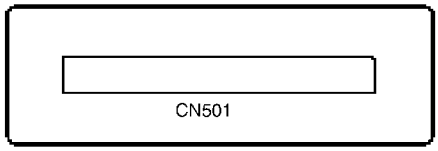
LED PCB <Top View>



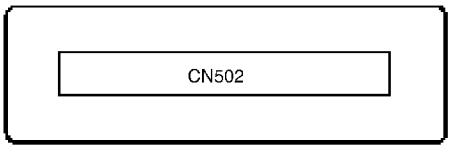
LED PCB <Bottom View>



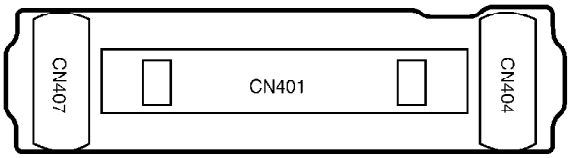
DU CON PCB<Top View>



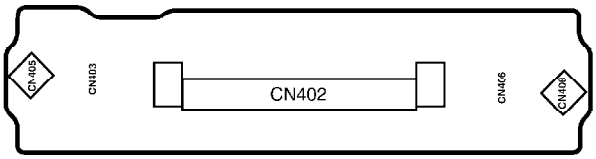
DU CON PCB<Bottom View>



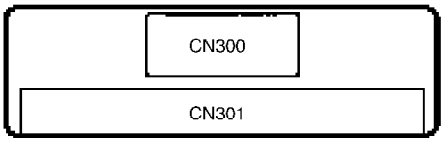
DU PCB<Top View>



DU PCB<Bottom View>



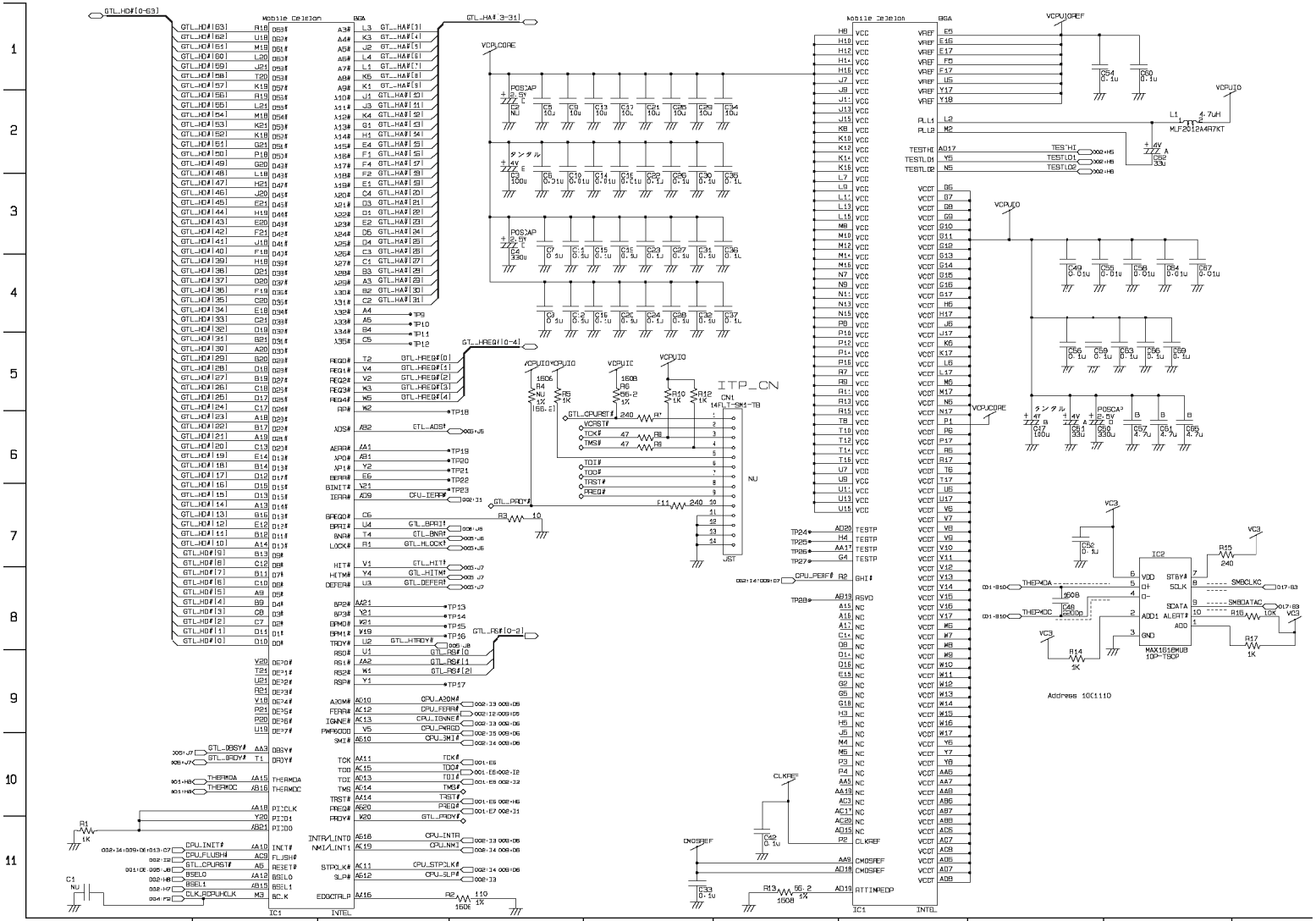
Serial PCB<Top View>



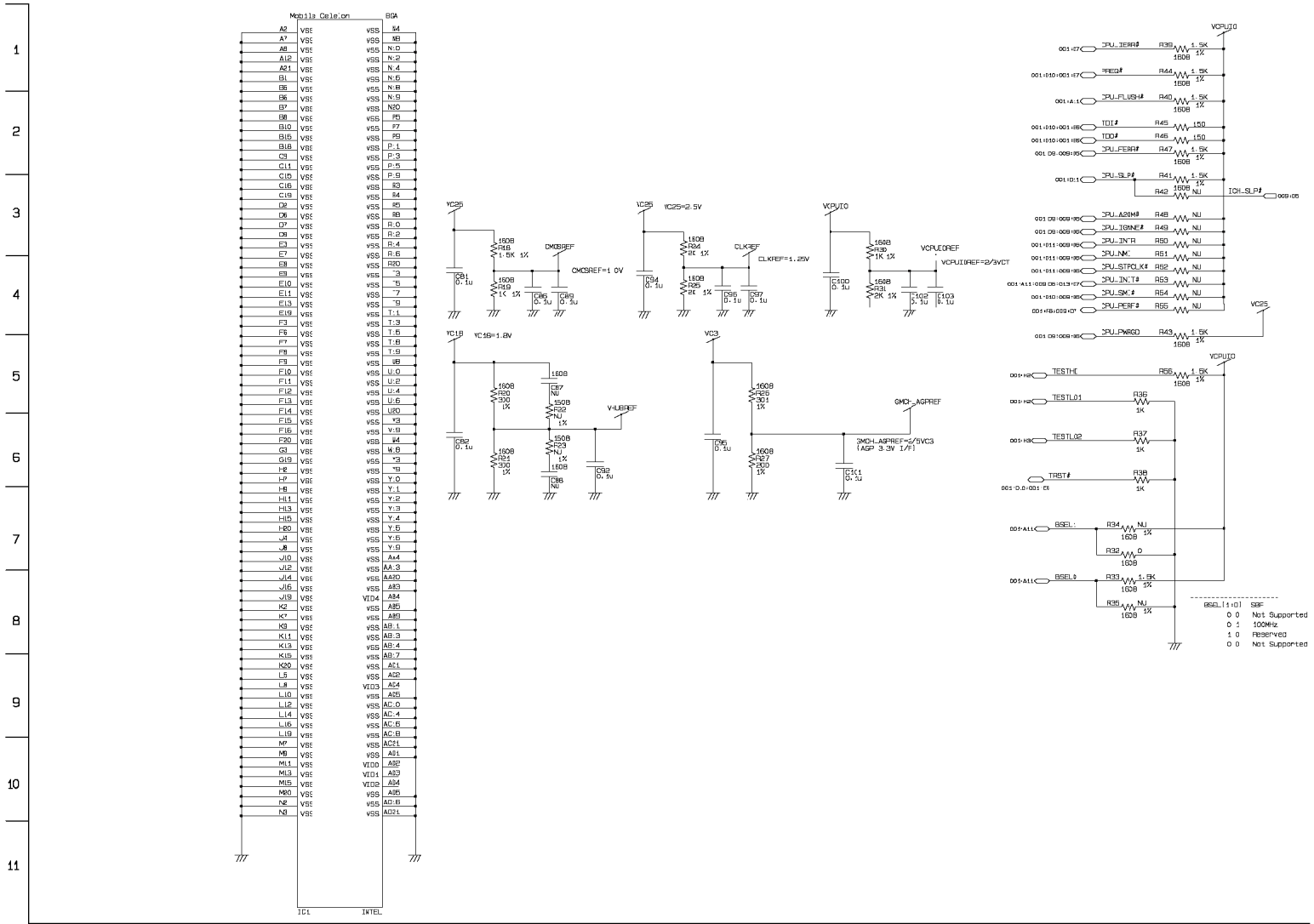
CF-07LZ5ZYXM

Schematic Diagrams

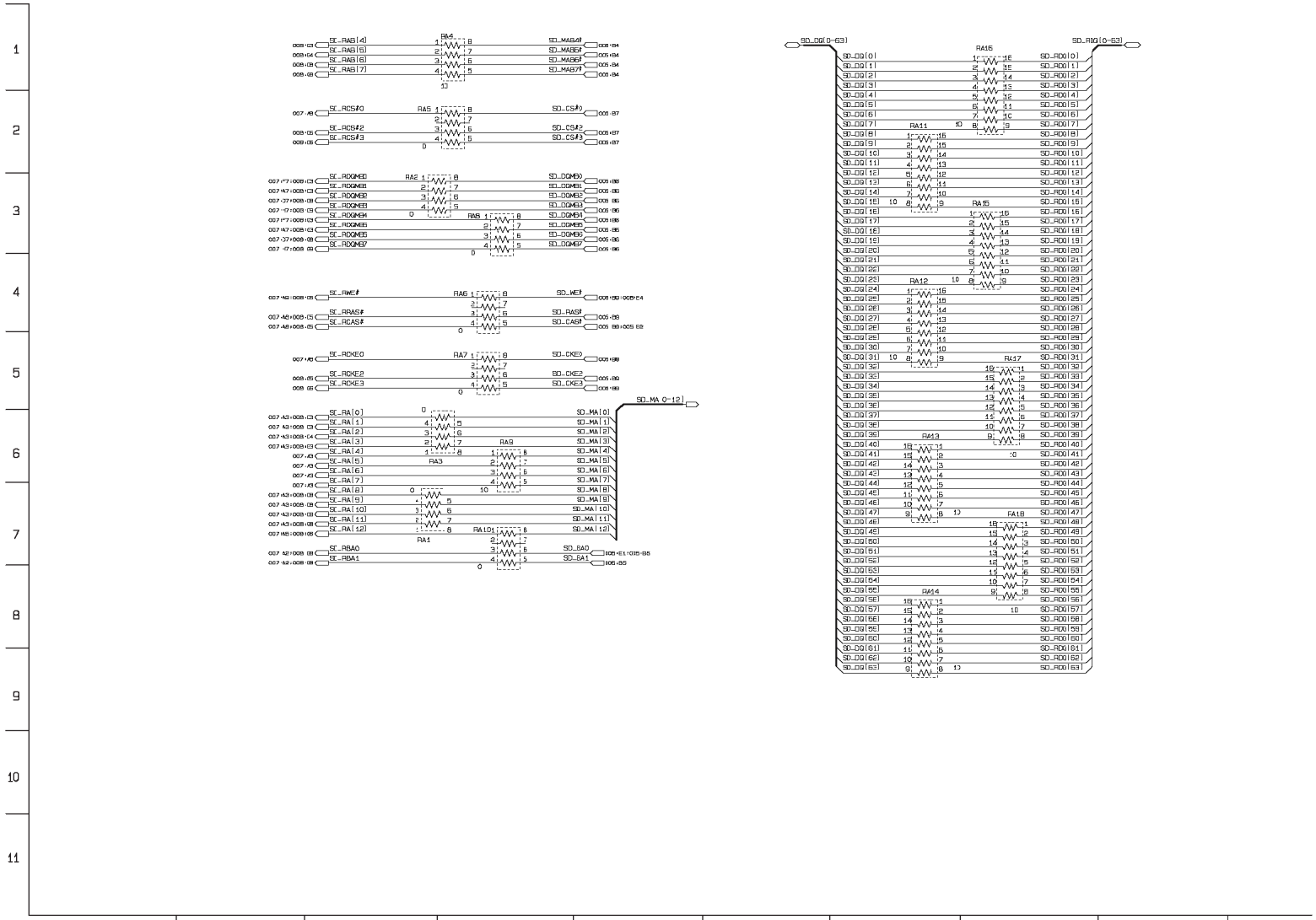
Upper Main 1 CPU (1 / 2)



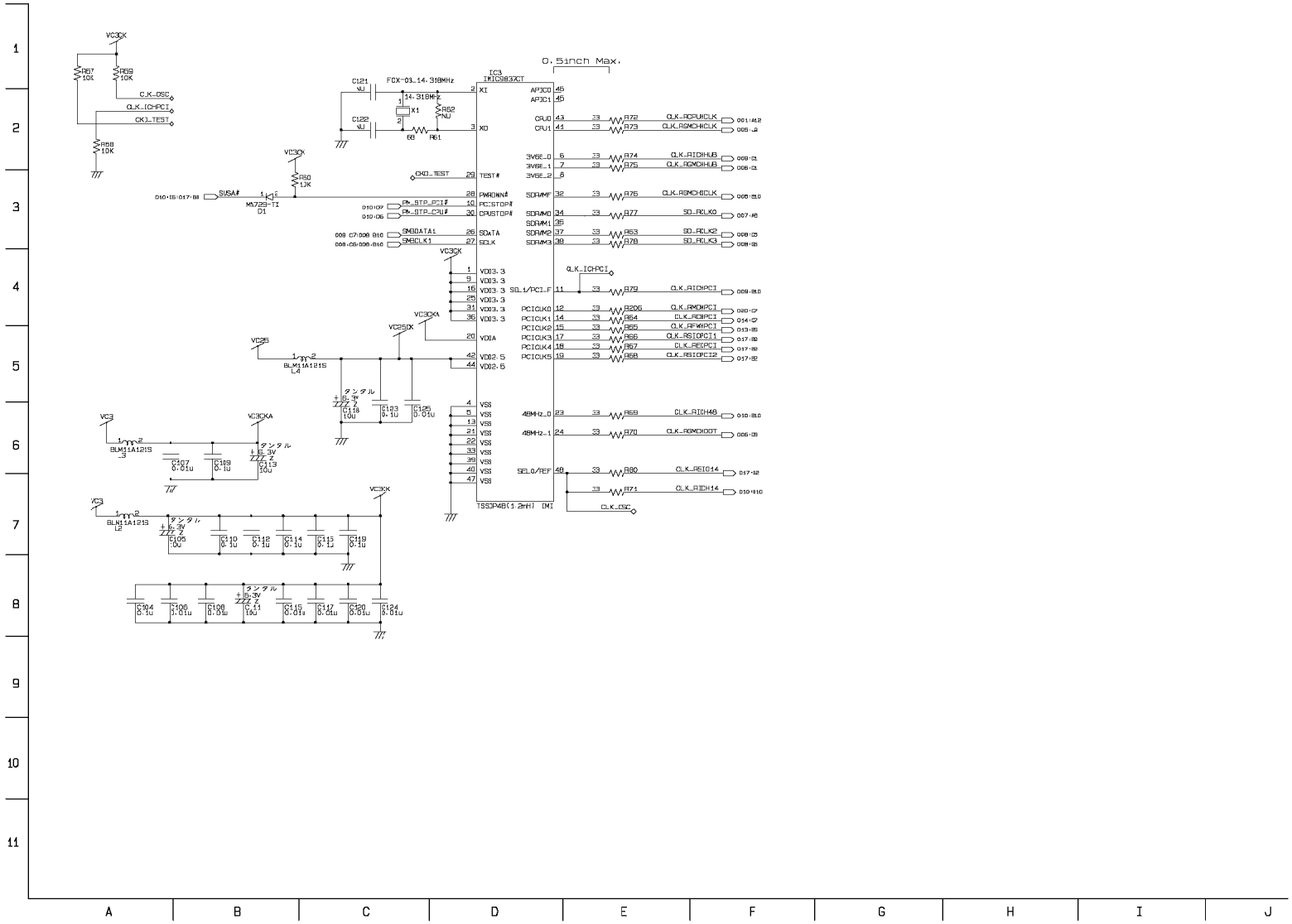
Upper Main 2 CPU (2 / 2)



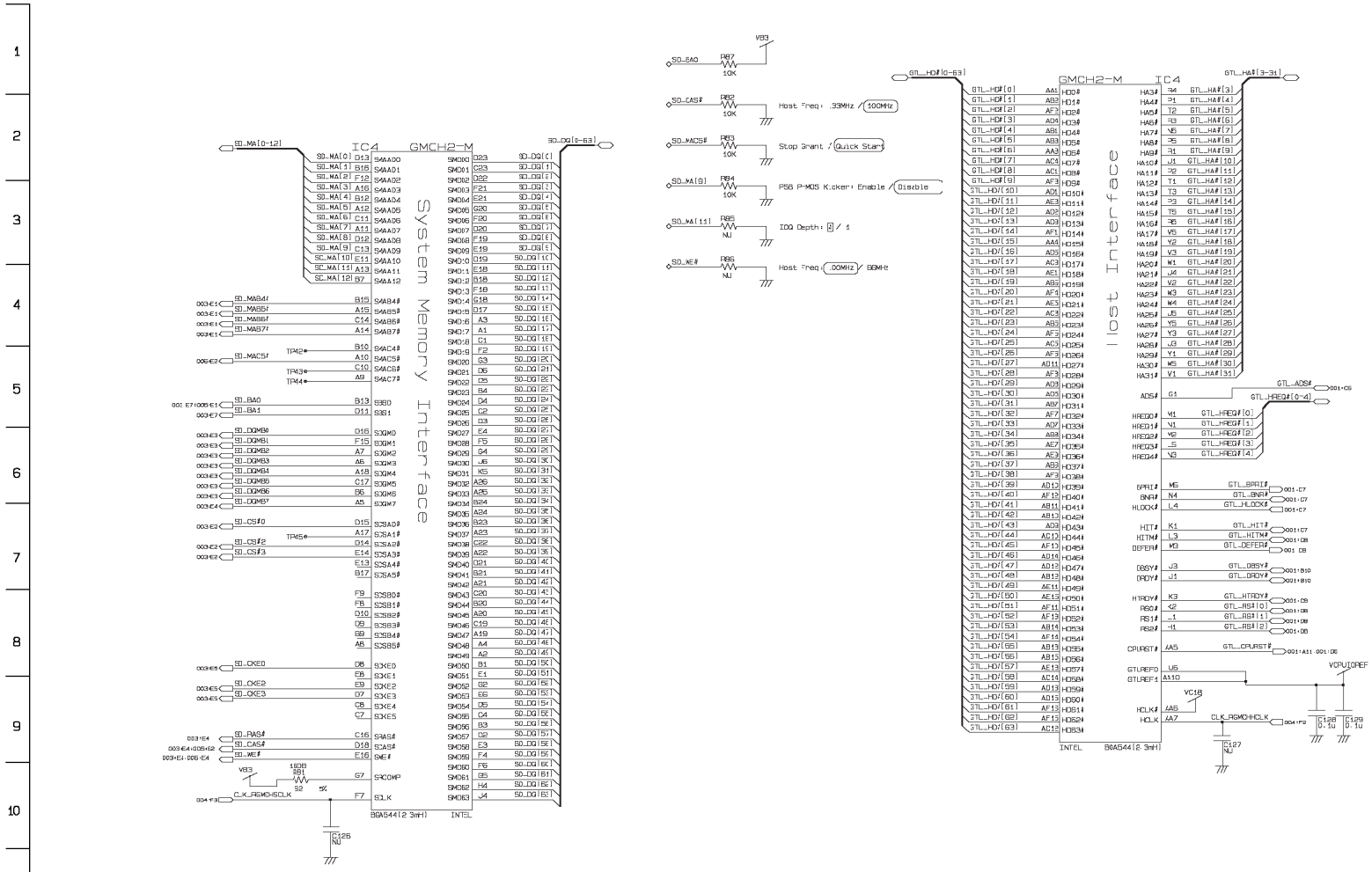
Upper Main 3 Resisters



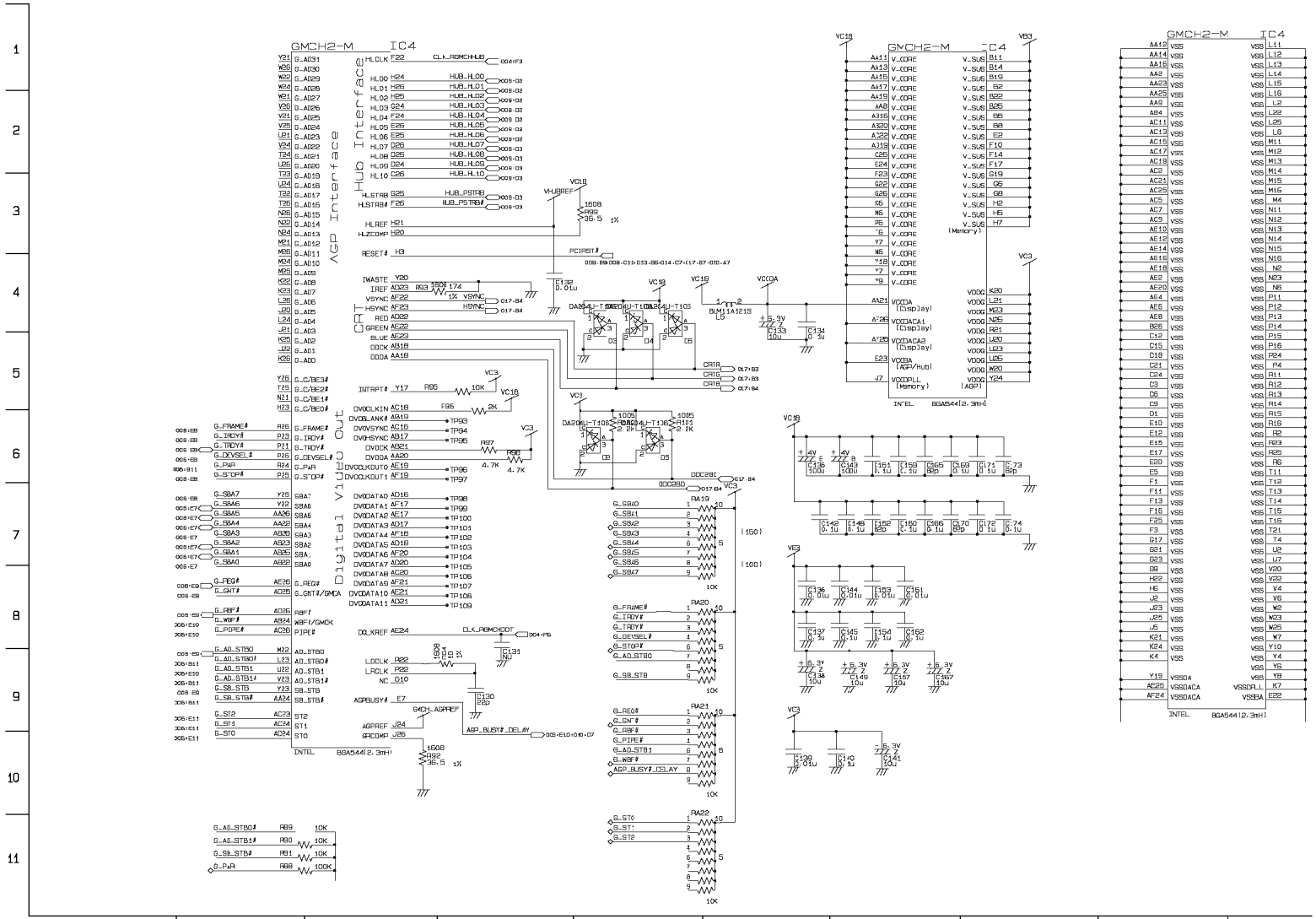
Upper Main 4 Clock



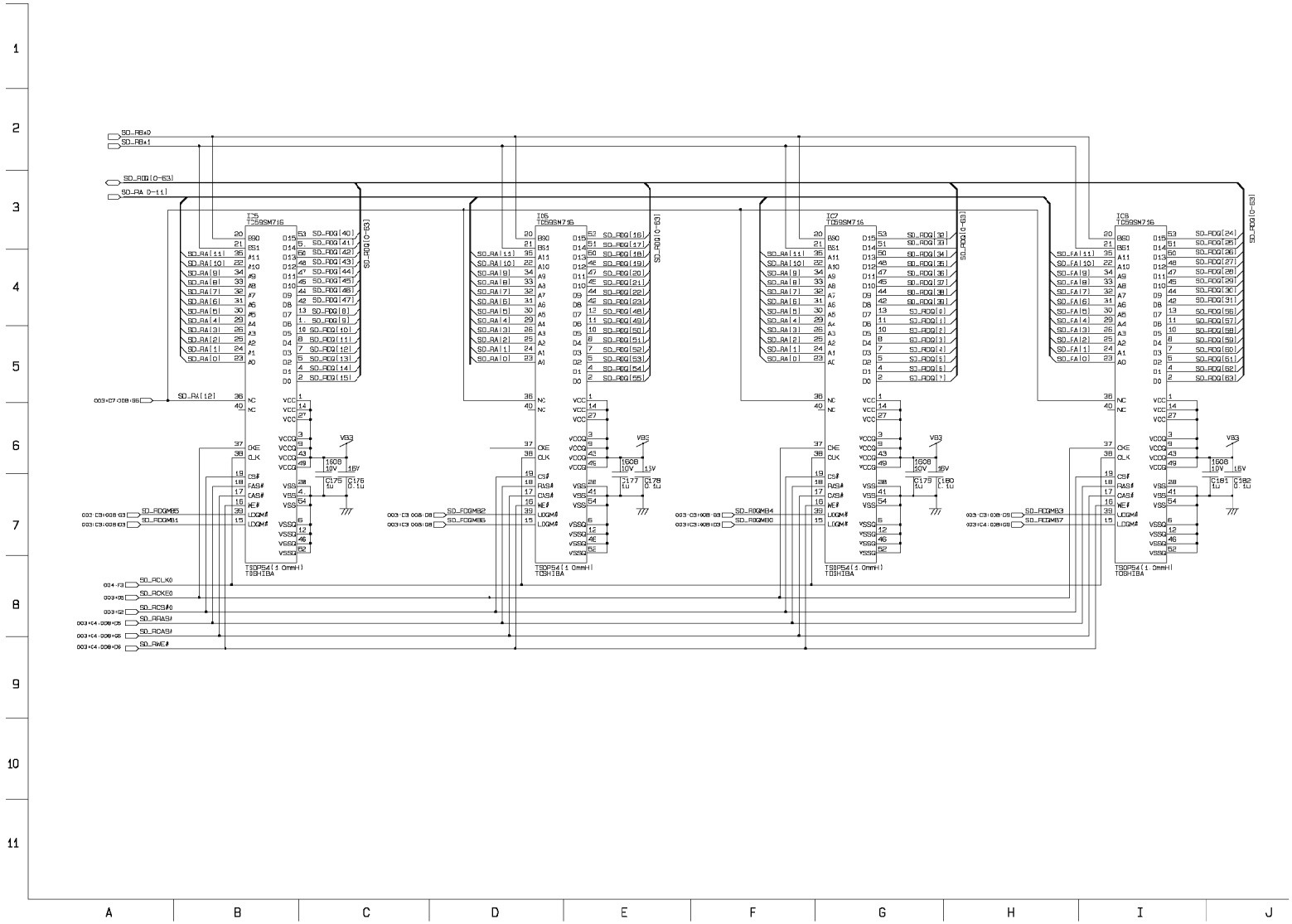
Upper Main 5 GMCH-M (1 / 2)



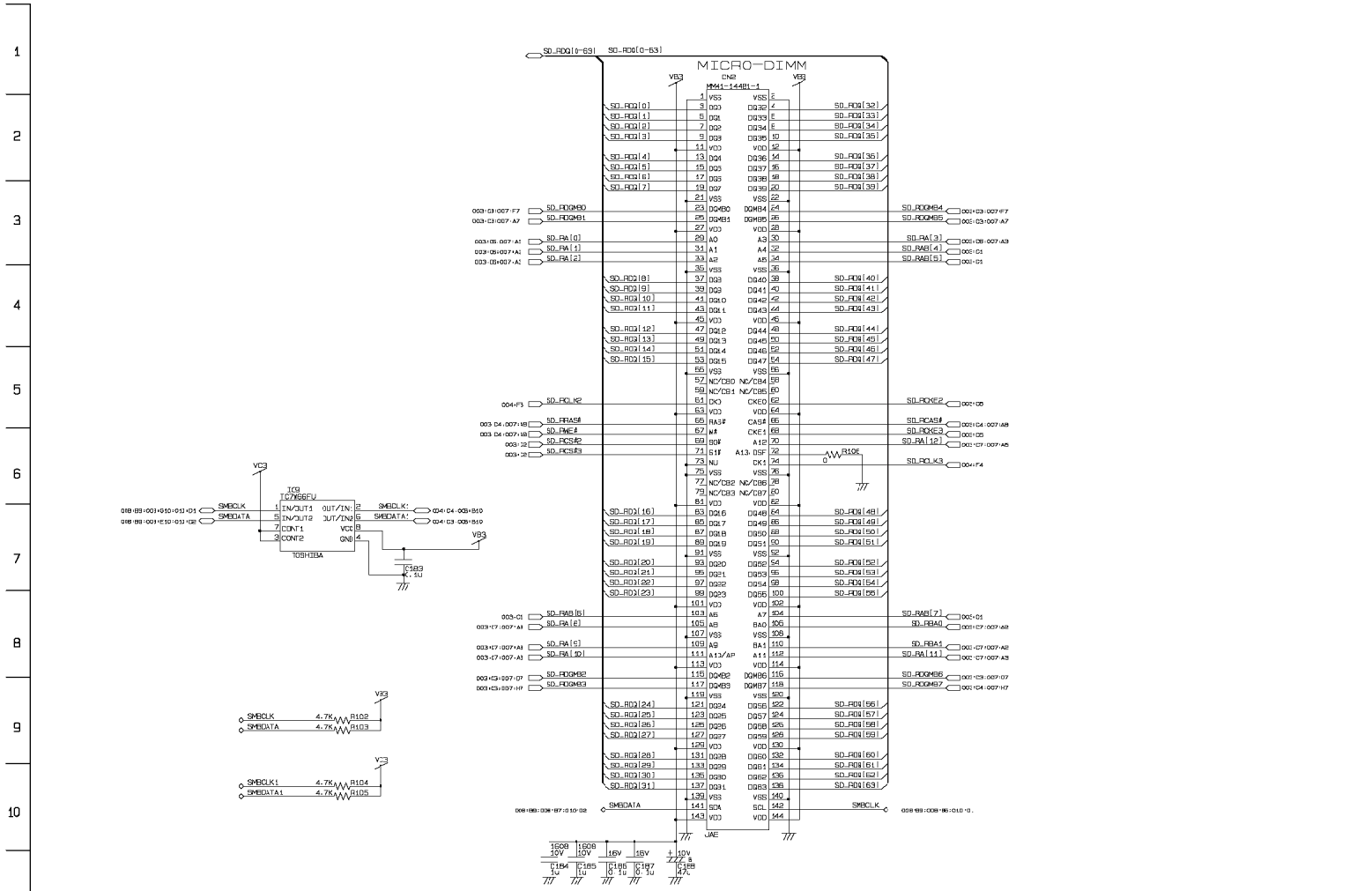
Upper Main 6 GMCH-M (2 / 2)



Upper Main 7 ON-Board Memory



Upper Main 8 Micro-DIMM


MICRO-DIMM
CN2
MM41-144B1-1
SD_RDQ[0-63]
SD_RDQ[0-63]
SD_RDQ[0]
SD_RDQ[1]
SD_RDQ[2]
SD_RDQ[3]
SD_RDQ[4]
SD_RDQ[5]
SD_RDQ[6]
SD_RDQ[7]
SD_RDQ[8]
SD_RDQ[9]
SD_RDQ[10]
SD_RDQ[11]
SD_RDQ[12]
SD_RDQ[13]
SD_RDQ[14]
SD_RDQ[15]
SD_RDQ[16]
SD_RDQ[17]
SD_RDQ[18]
SD_RDQ[19]
SD_RDQ[20]
SD_RDQ[21]
SD_RDQ[22]
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SD_RDQ[62]
SD_RDQ[63]
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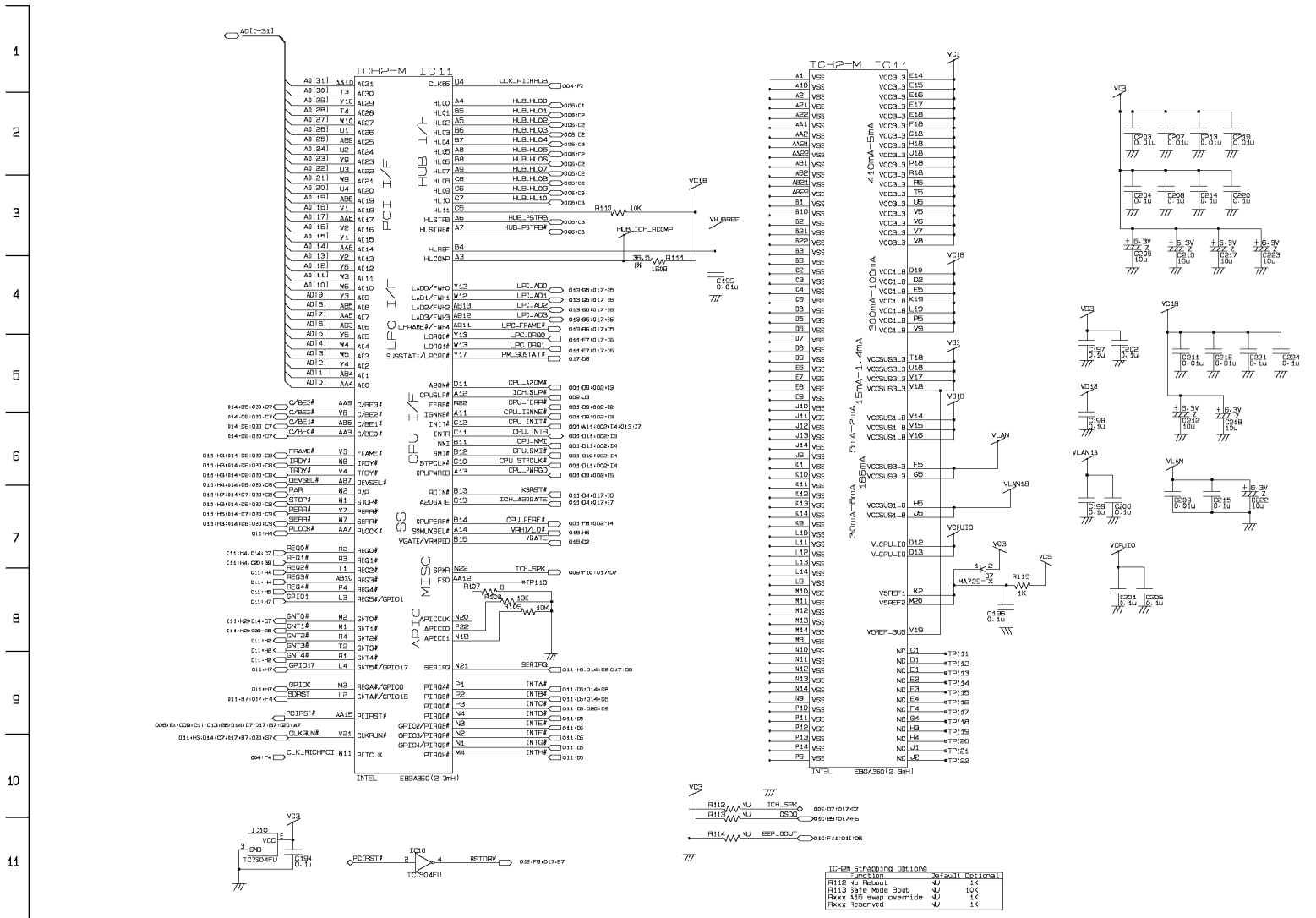
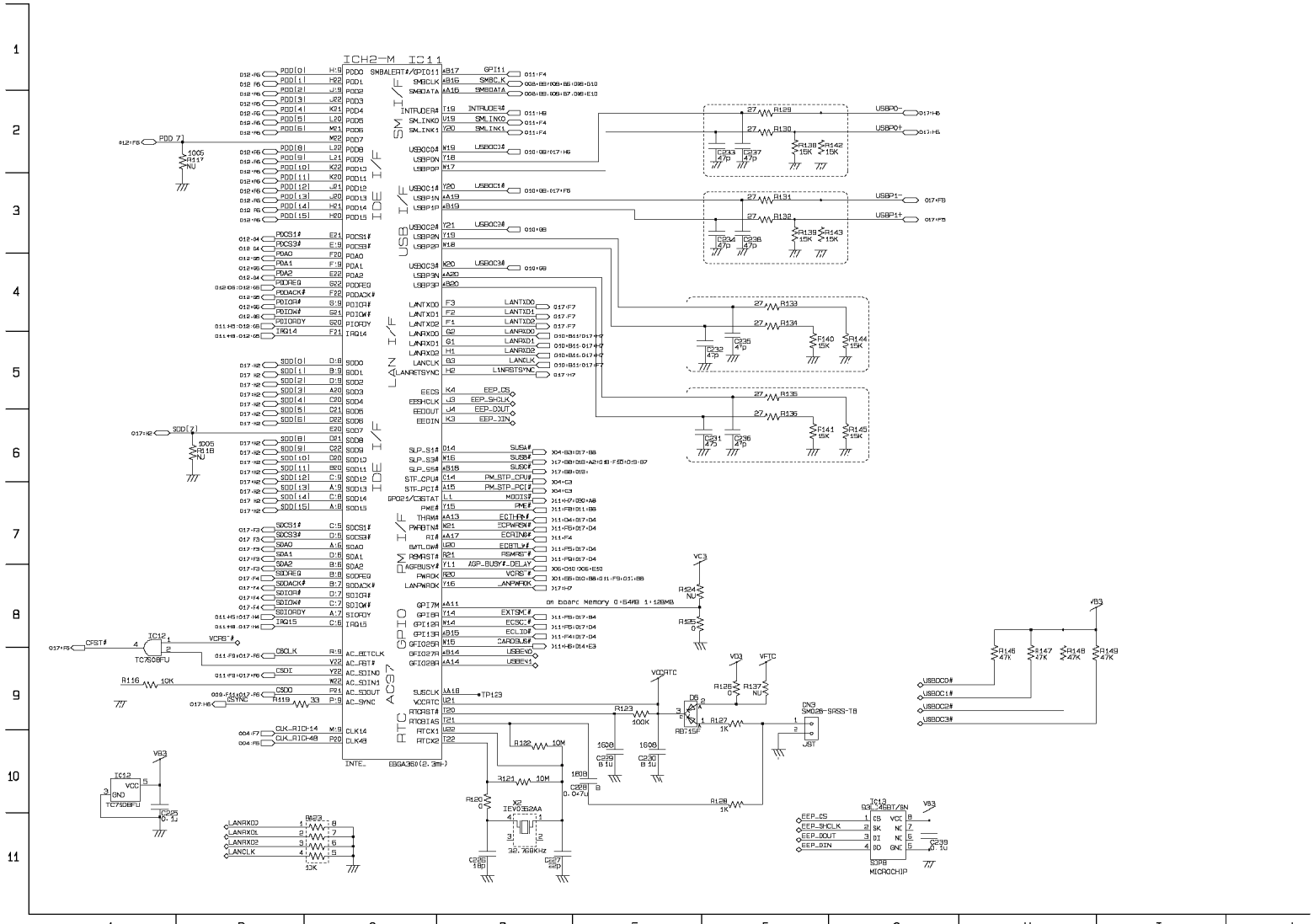
SD_RDQMB1
SD_RDQMB2
SD_RDQMB3
SD_RDQMB4
SD_RDQMB5
SD_RDQMB6
SD_RDQMB7
SD_RA[0]
SD_RA[1]
SD_RA[2]
SD_RA[3]
SD_RAB[4]
SD_RAB[5]
SD_RAB[6]
SD_RAB[7]
SD_RCLK2
SD_RCLK3
SD_RCKE2
SD_RCKE3
SD_RRAS#
SD_RWE#
SD_RCS#2
SD_RCS#3
SD_RCAS#
SD_RA[12]
SD_RA[8]
SD_RA[9]
SD_RA[10]
SD_RA[11]
SD_RBA0
SD_RBA1
R106
0
SMBCLK
SMBDATA
SMBCLK1
SMBDATA1
R102
R103
R104
R105
4.7K
IC9
TC7SBFU
TOSHIBA
C183
.1U
VCC
VB3
VB3
VB3

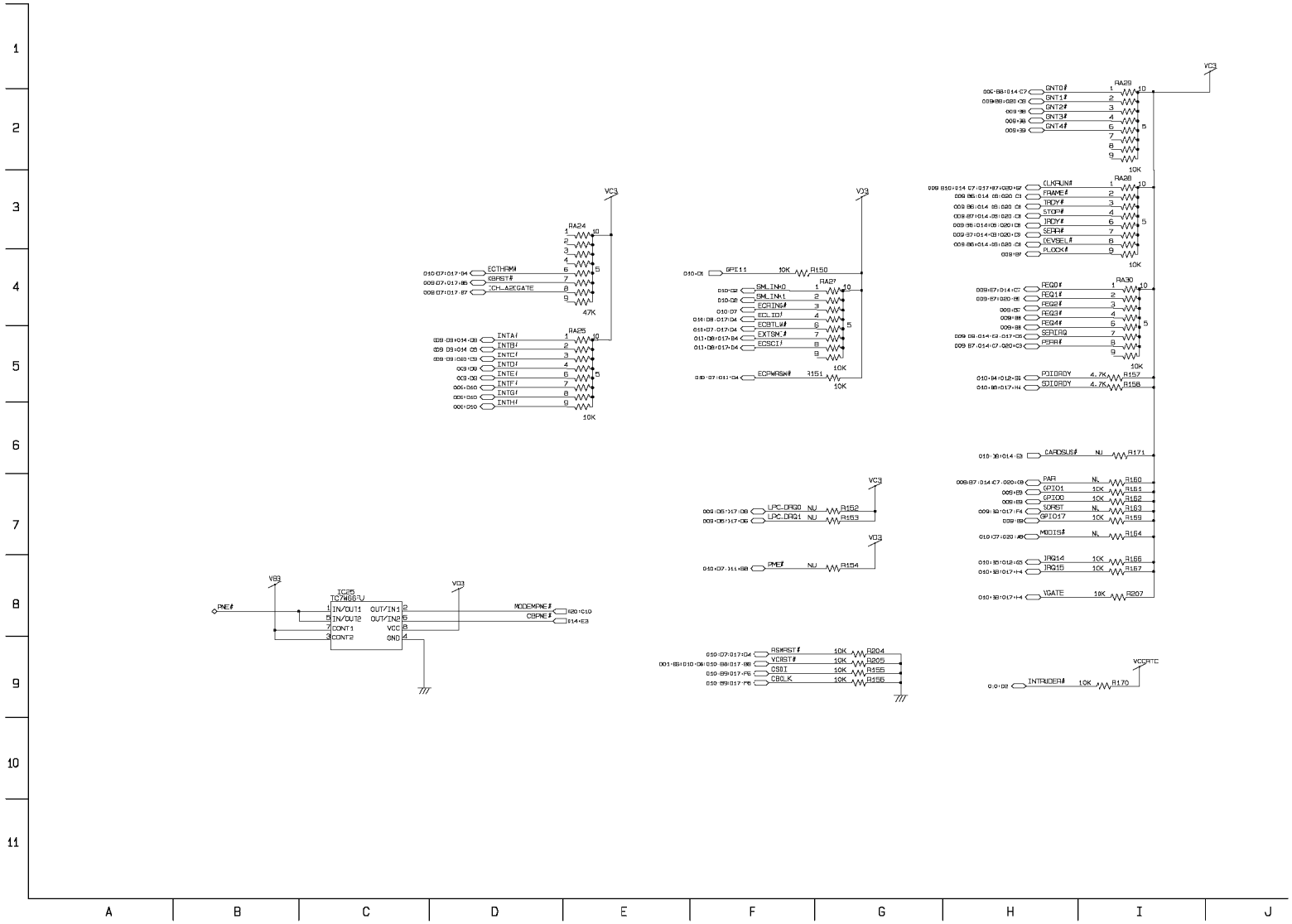
Upper Main 9 iCH2-M (1 / 2)



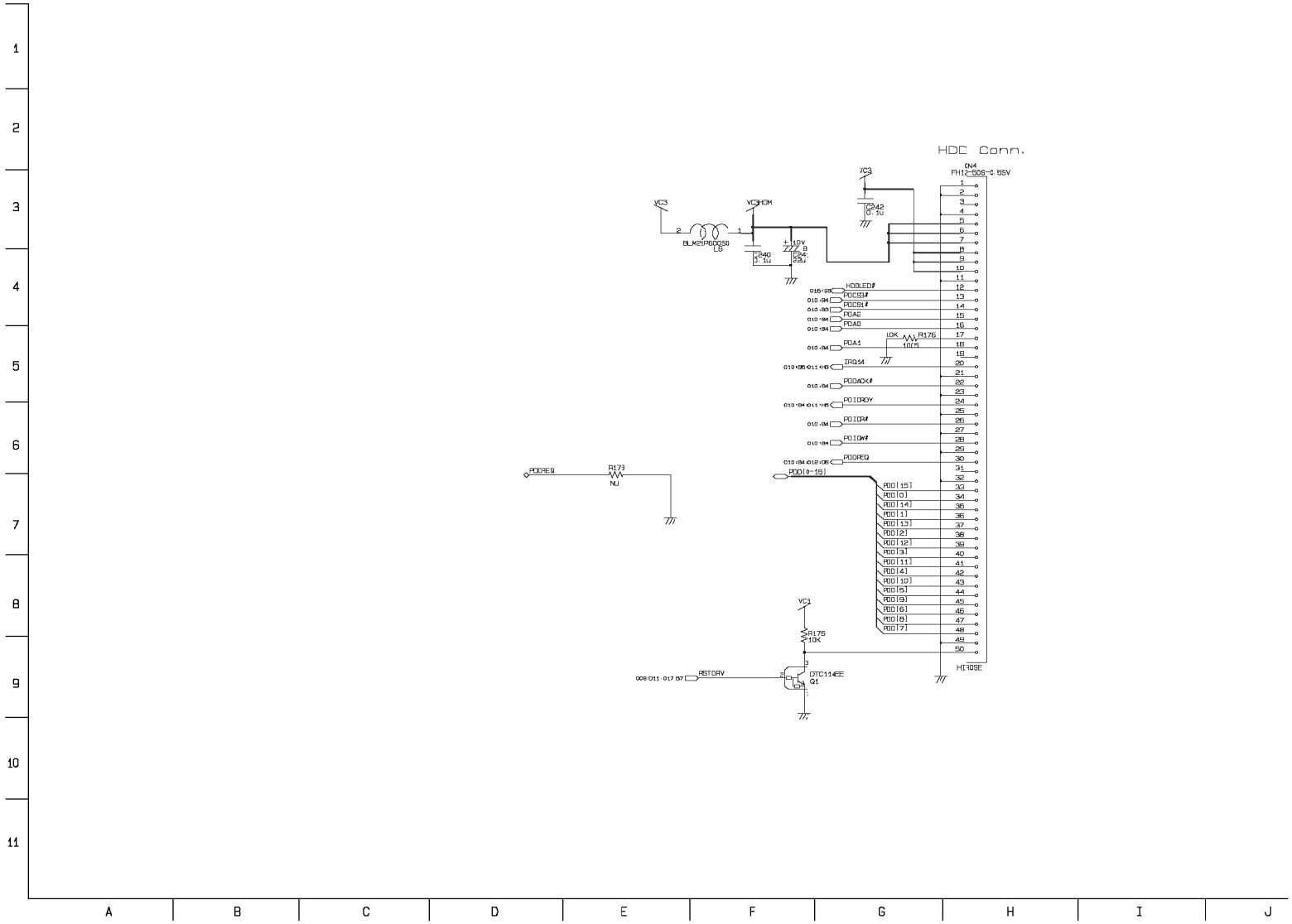
Upper Main 10 iCH2-M (2 / 2)



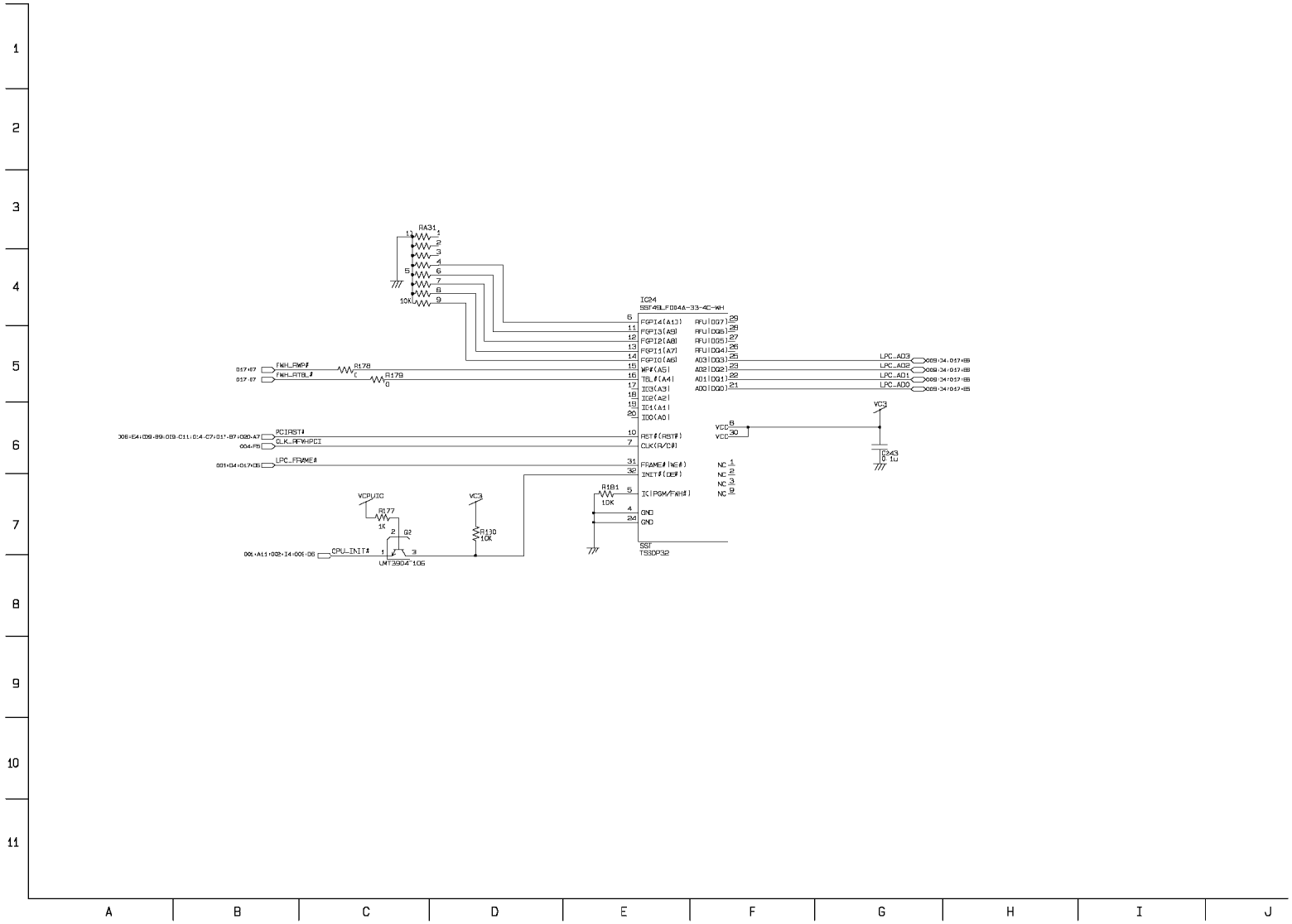
Upper Main 11 Terminator



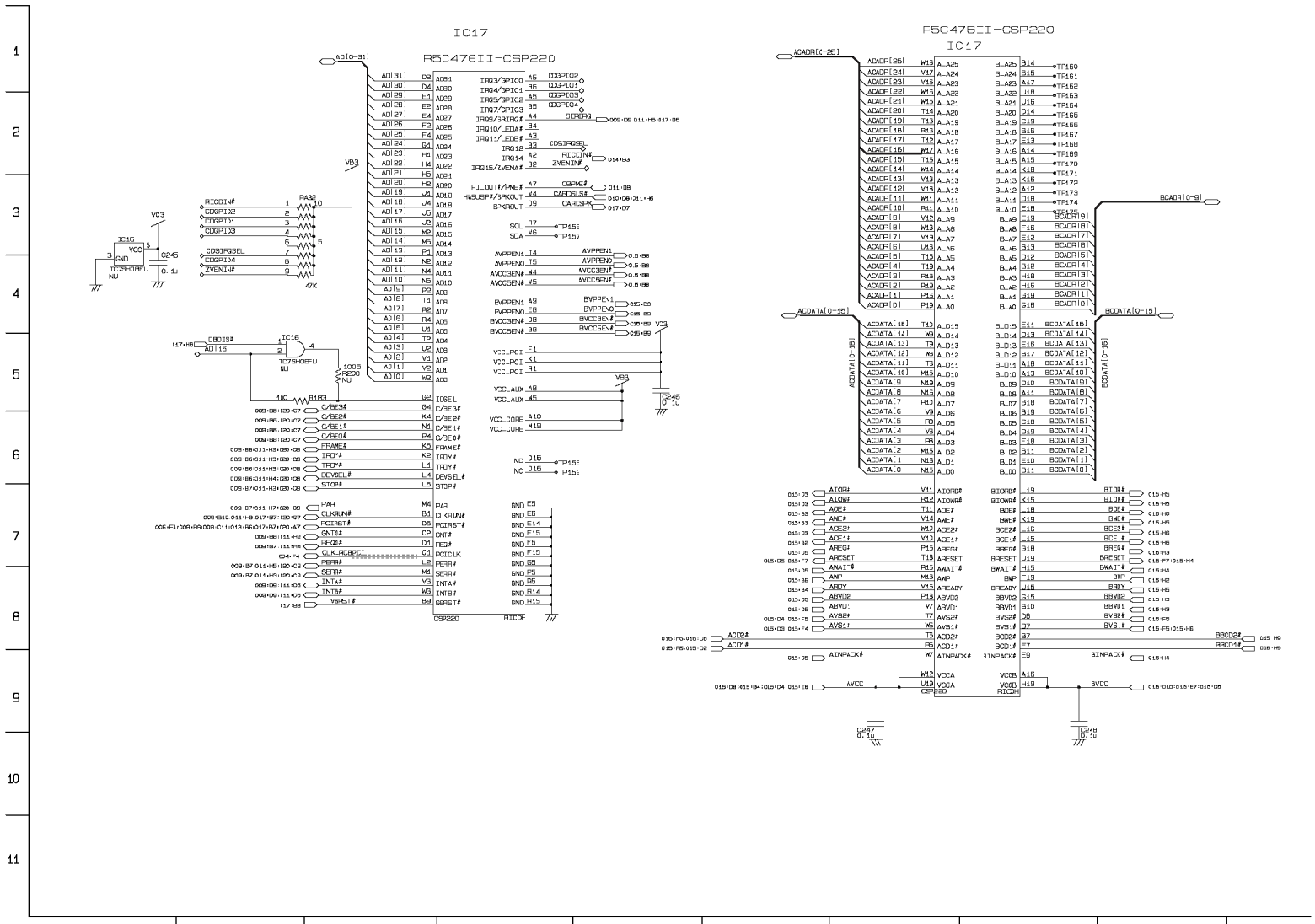
Upper Main 12 HDD



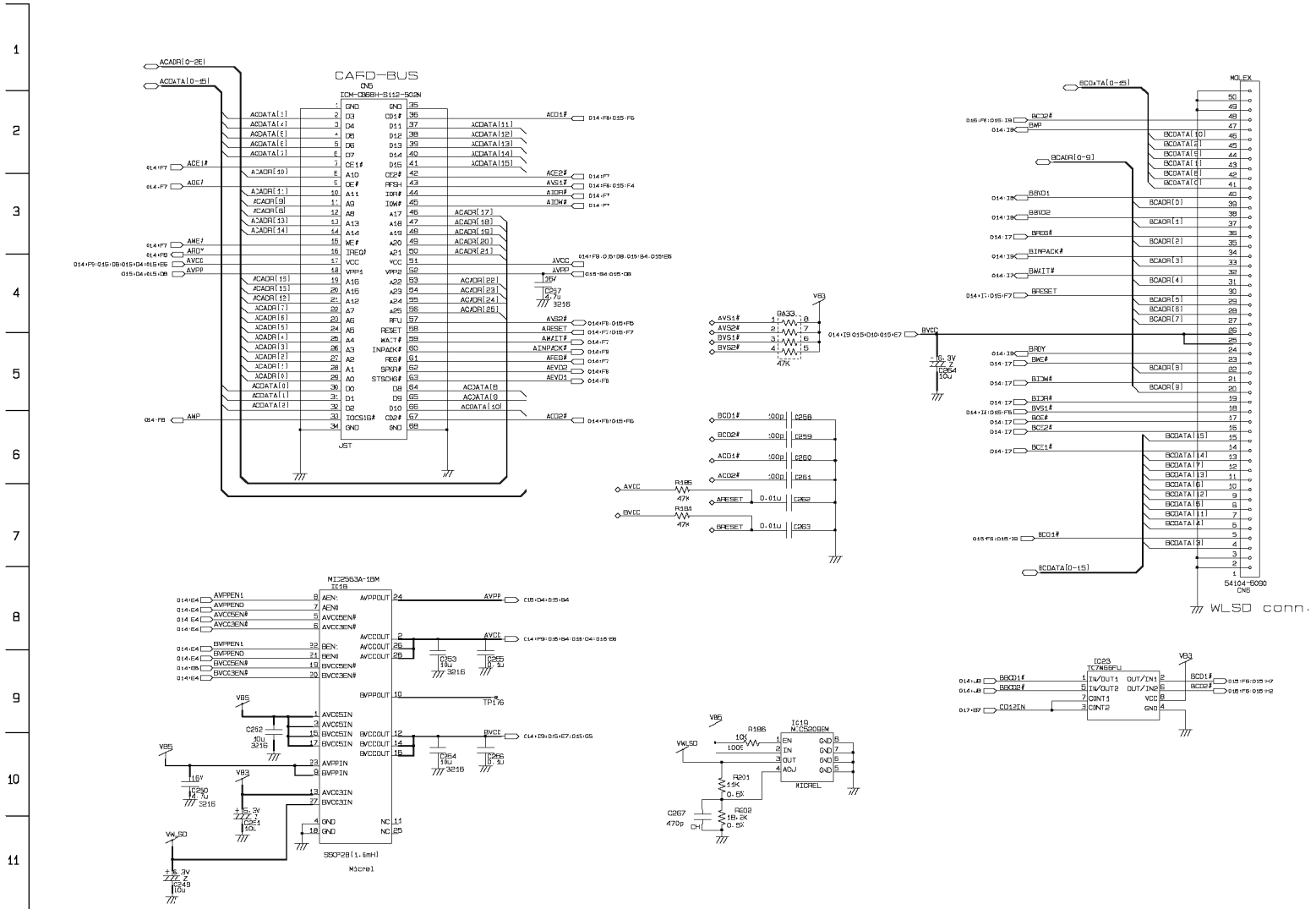
Upper Main 13 BIOS



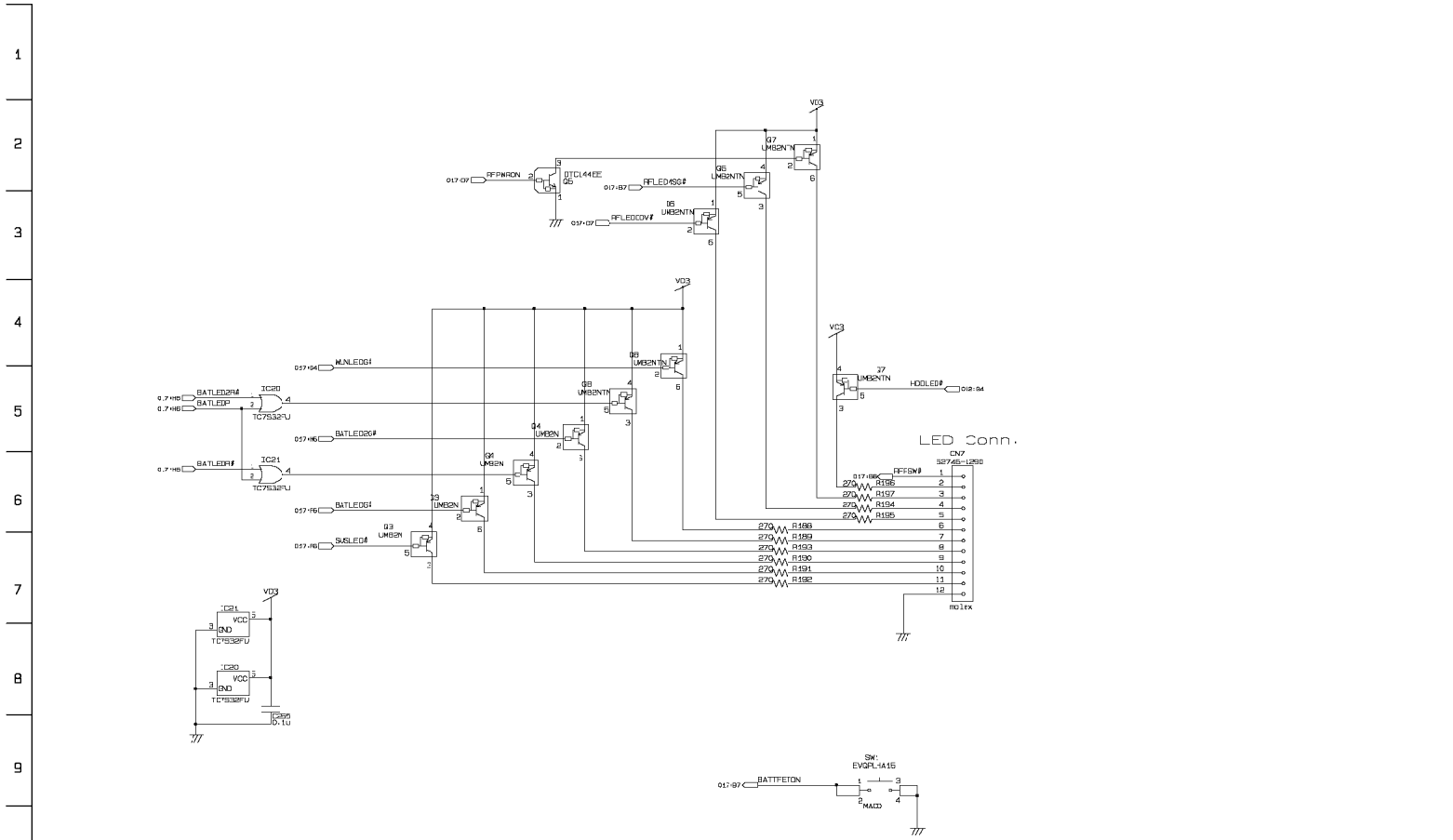
Upper Main 14 PCMCIA Controller



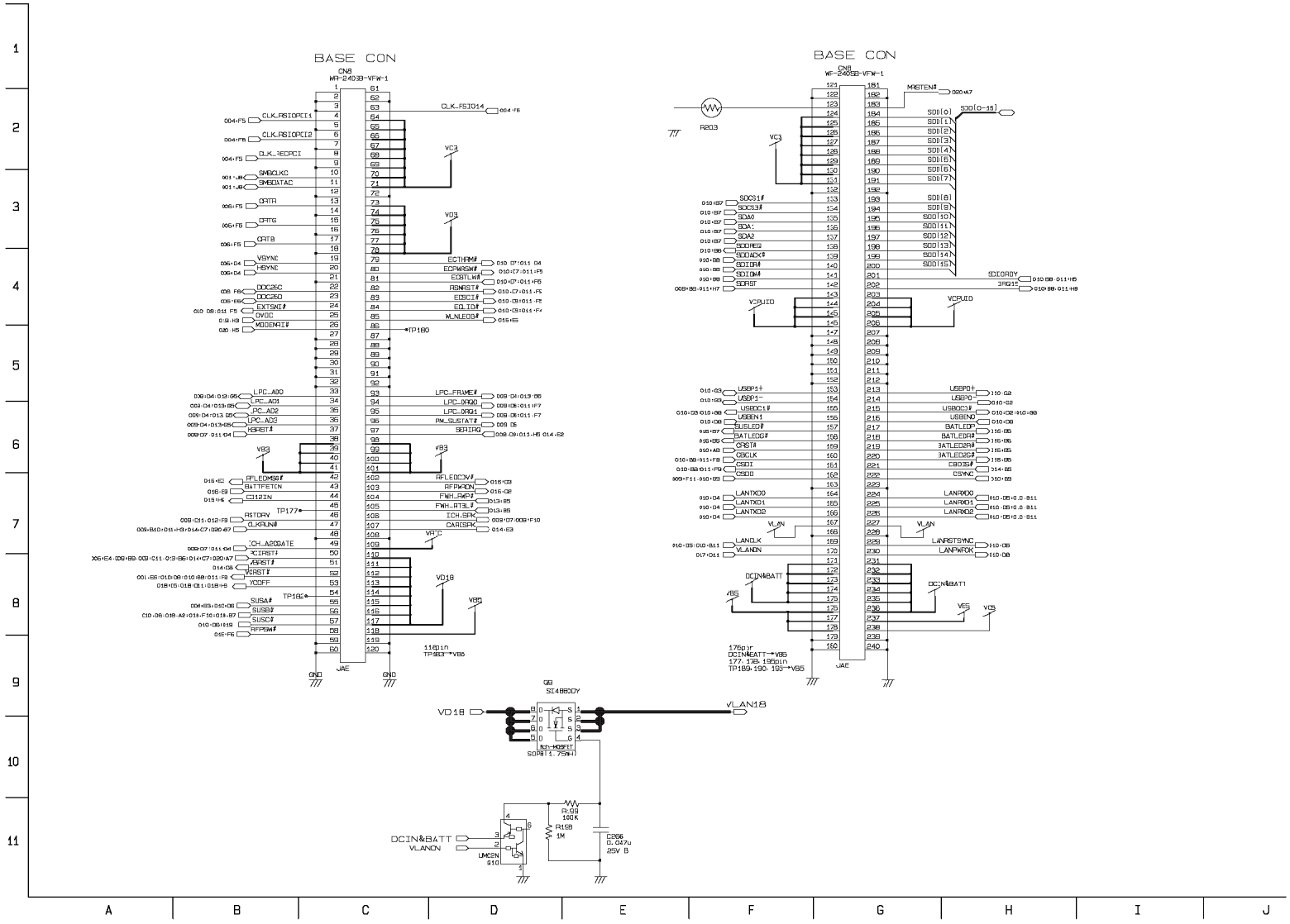
Upper Main 15 Slot #1 & WLSD Connector



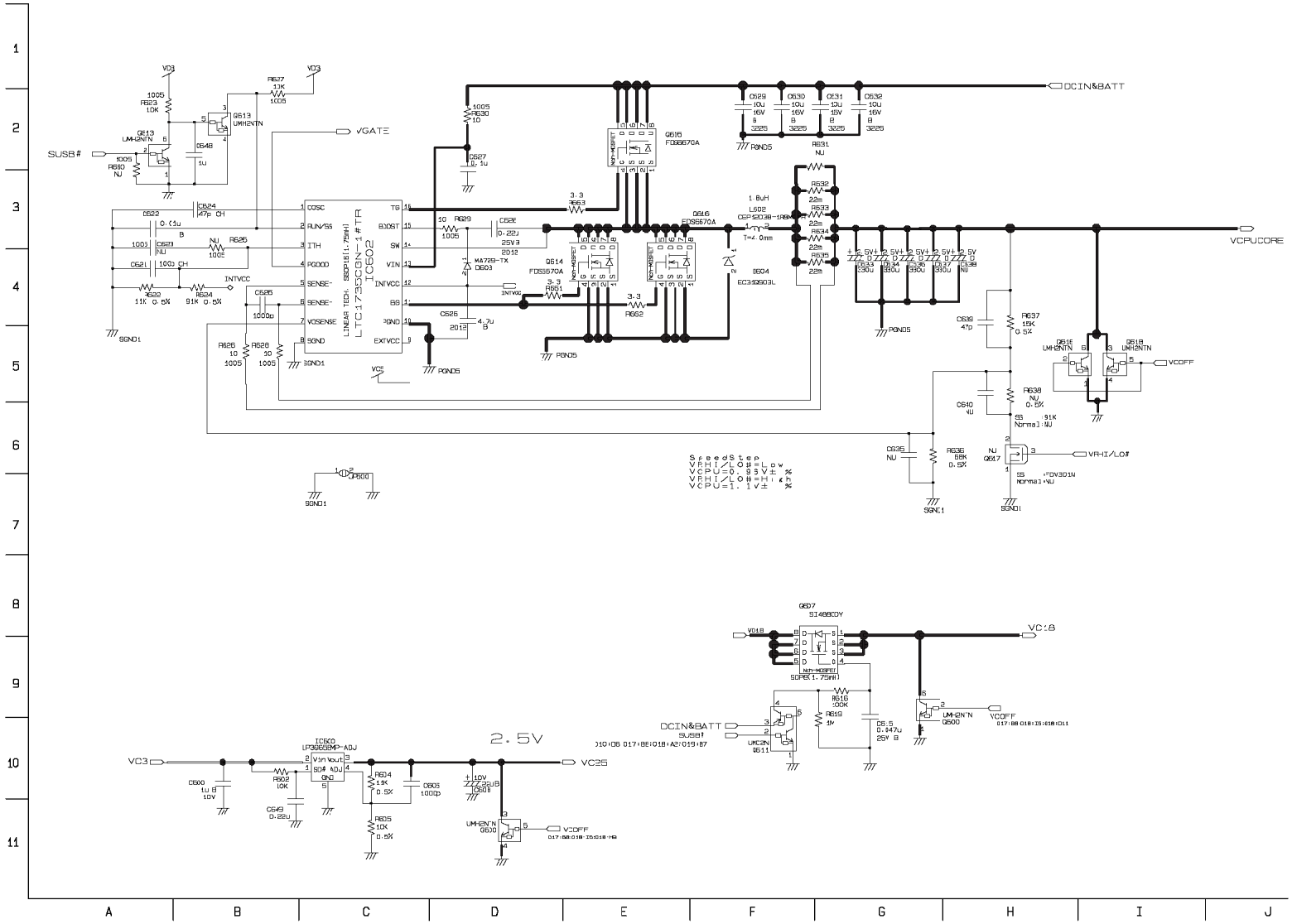
Upper Main 16 LED Connector



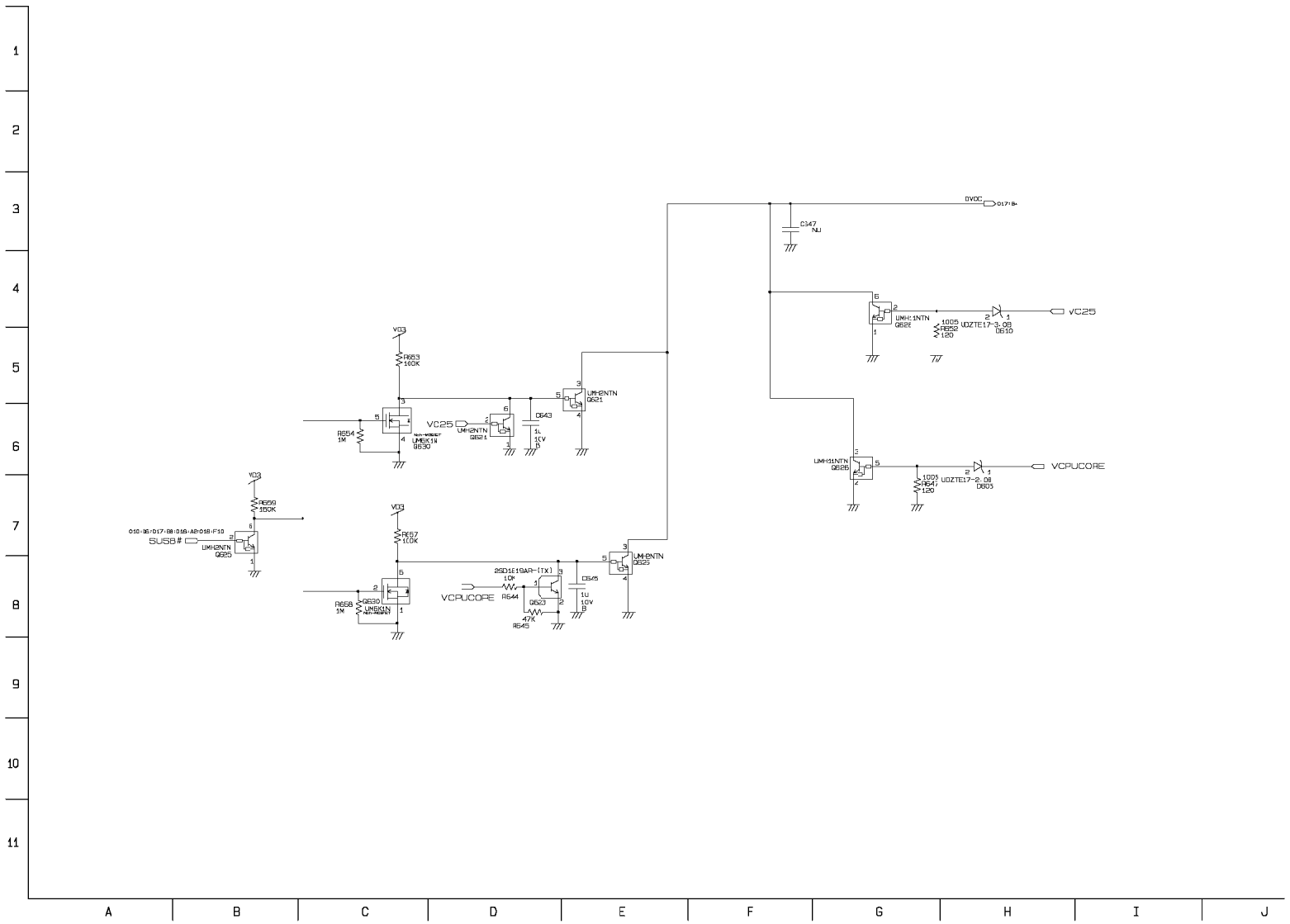
Upper Main 17 Base Connector



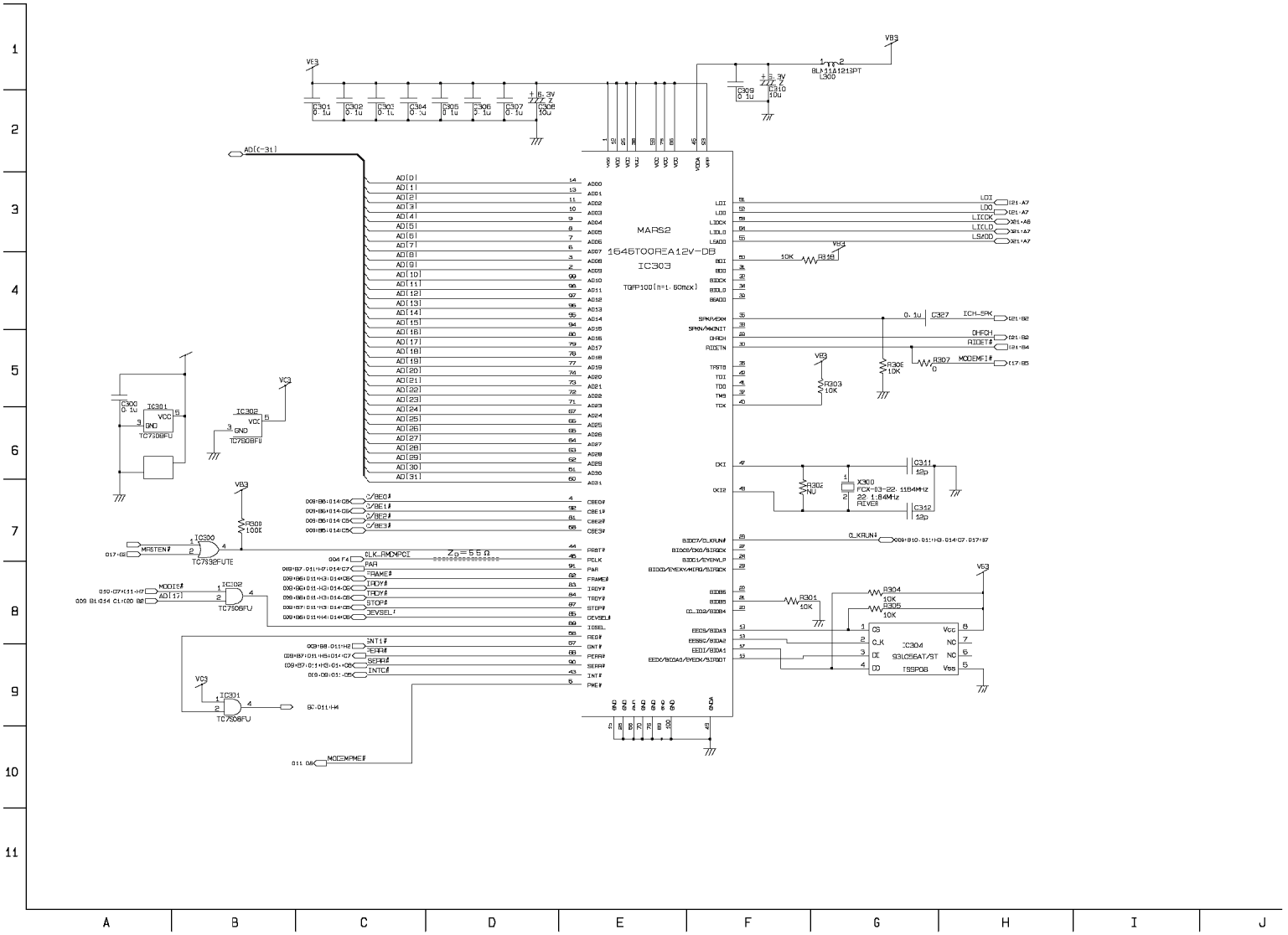
Upper Main 18 VCPUCORE & VC25



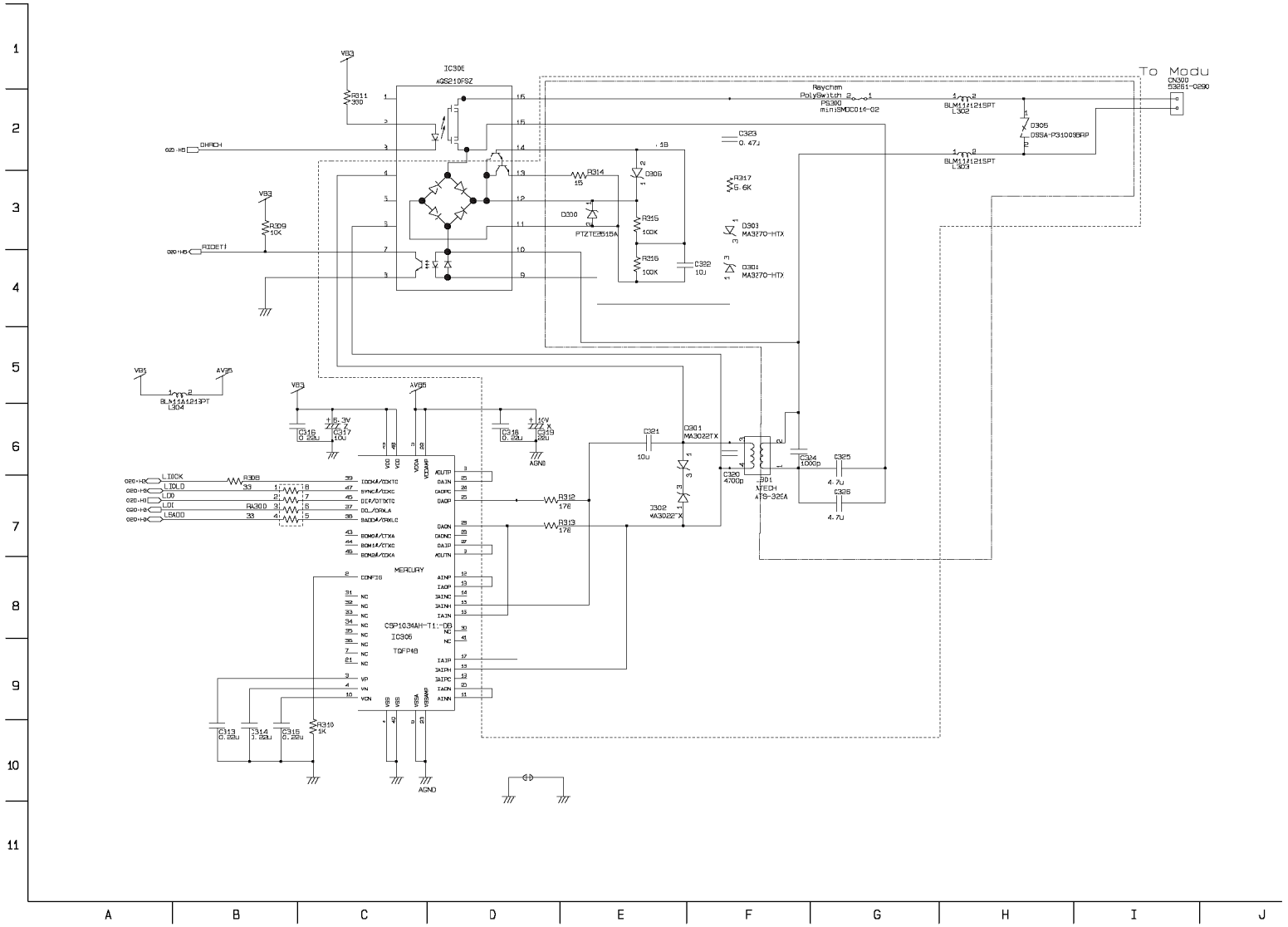
Upper Main 19 Power Circuit



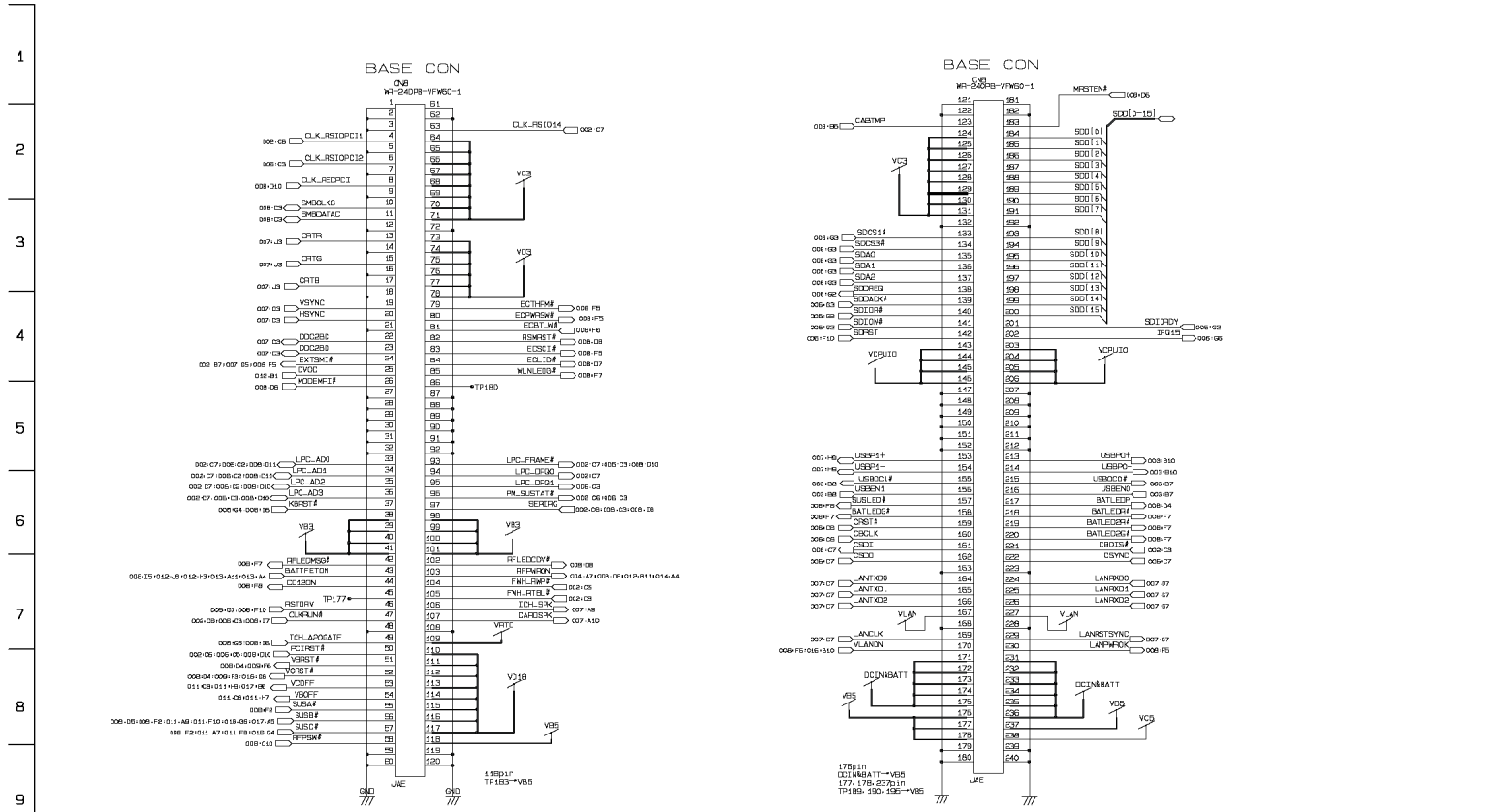
Upper Main 20 Modem Controller



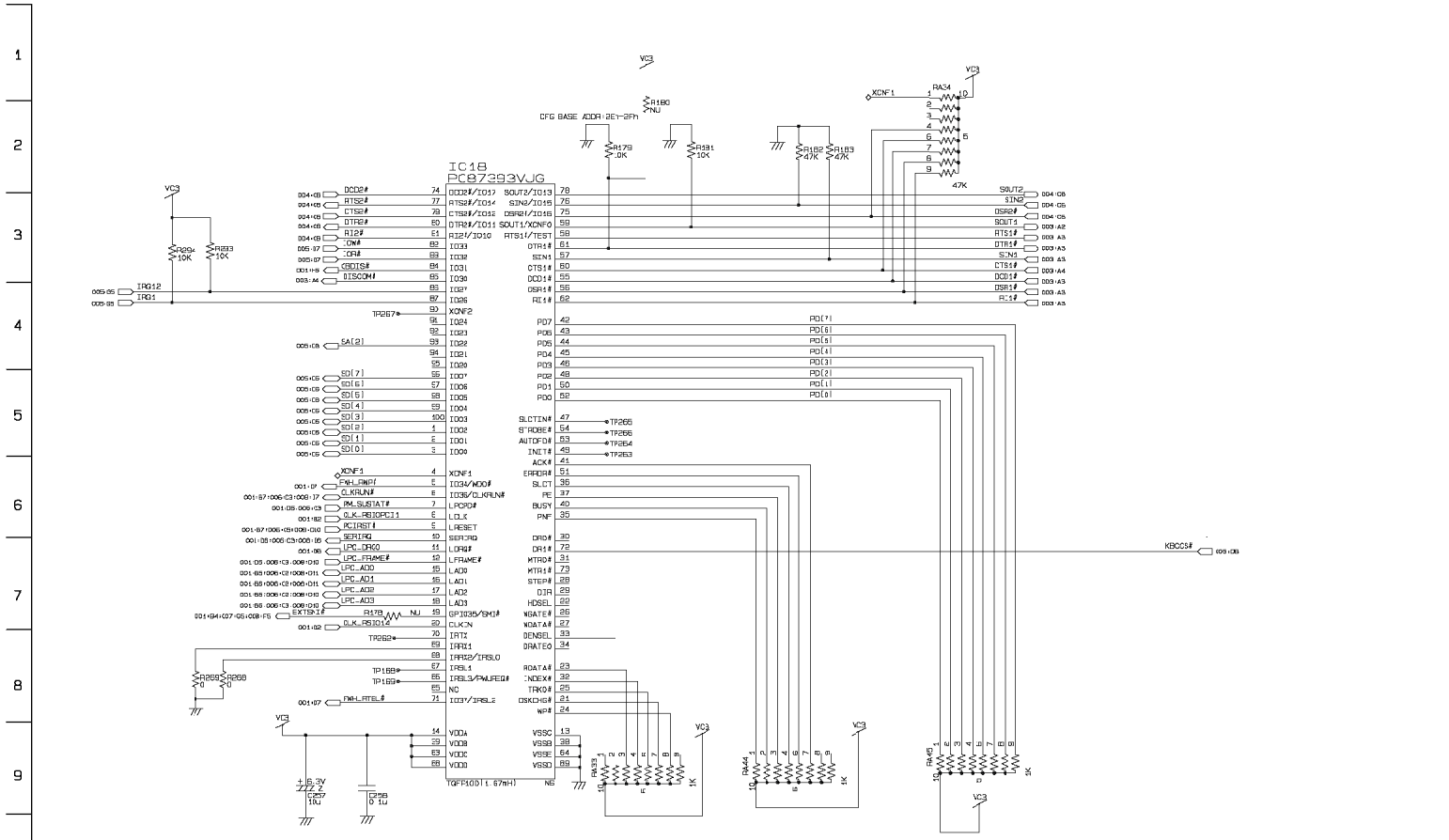
Upper Main 21 Line Codec



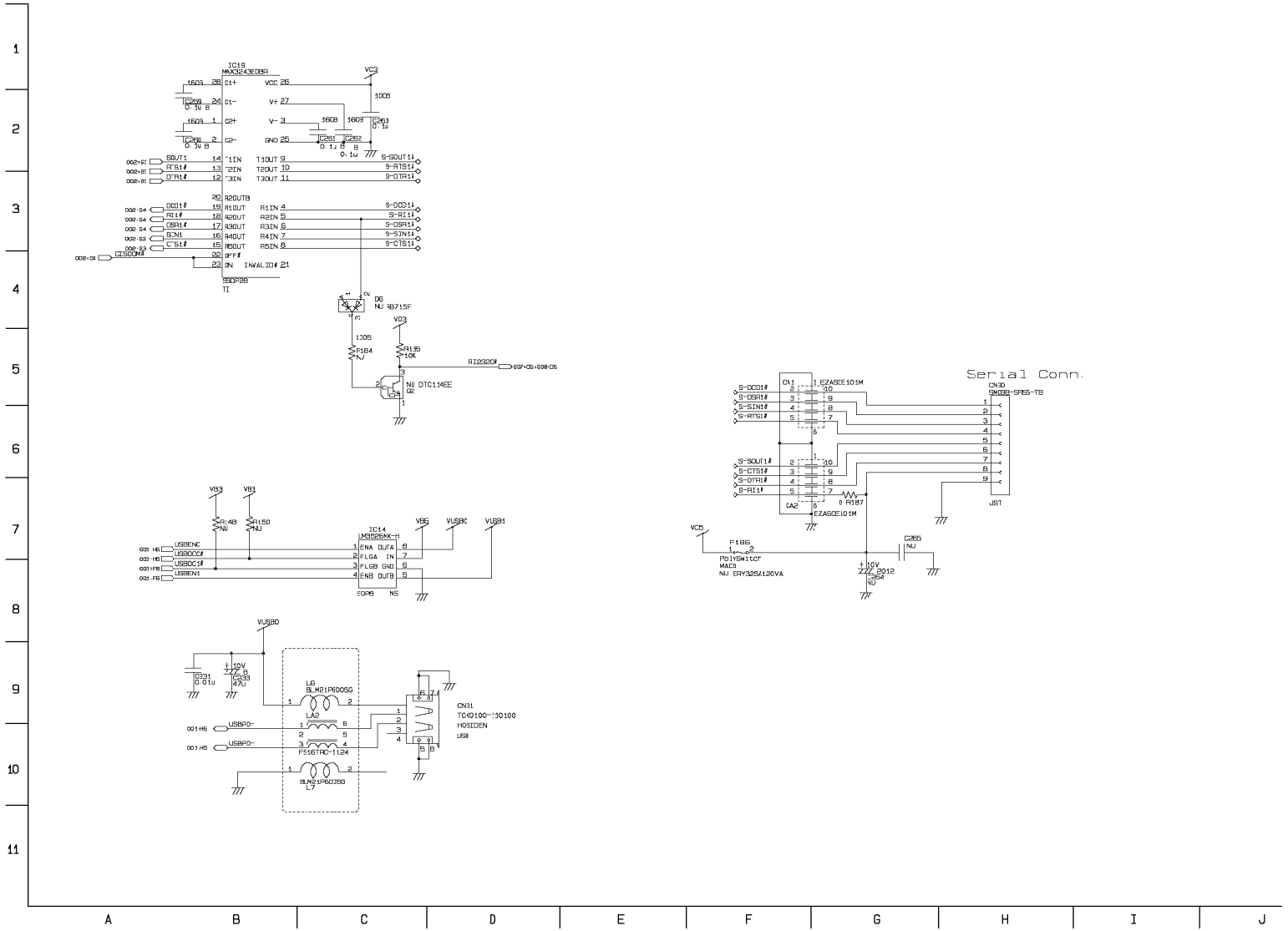
Lower Main 1 Connector



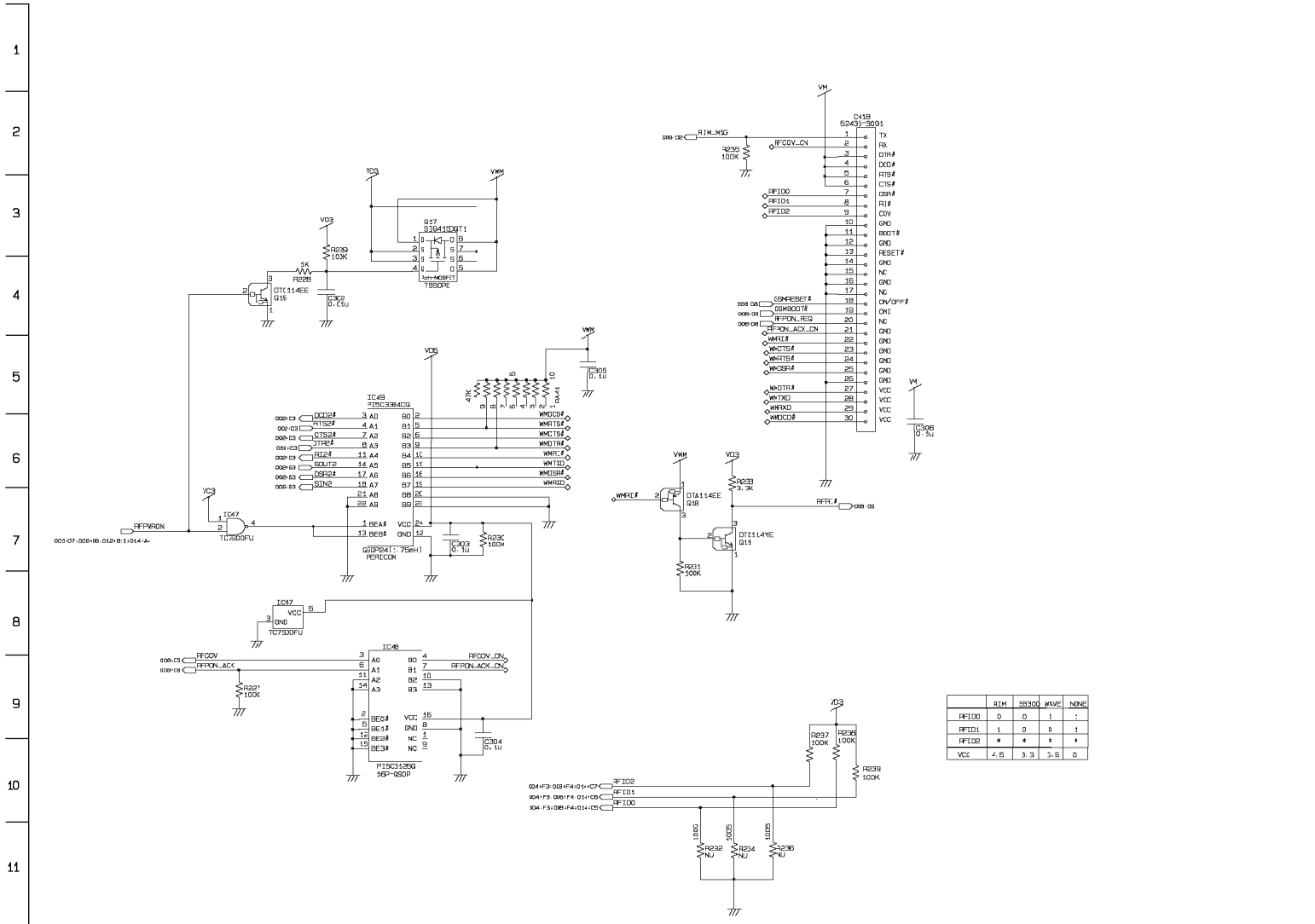
Lower Main 2 Super I/O



Lower Main 3 COM Connector

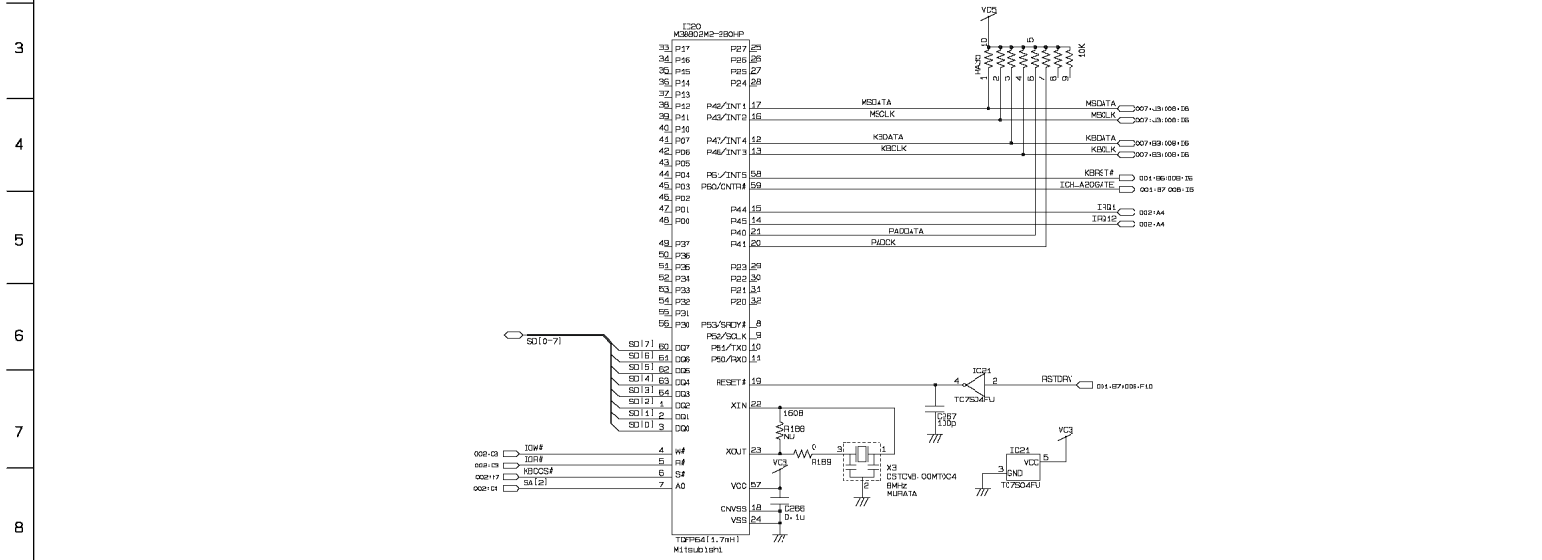


Lower Main 4 Wireless Connector

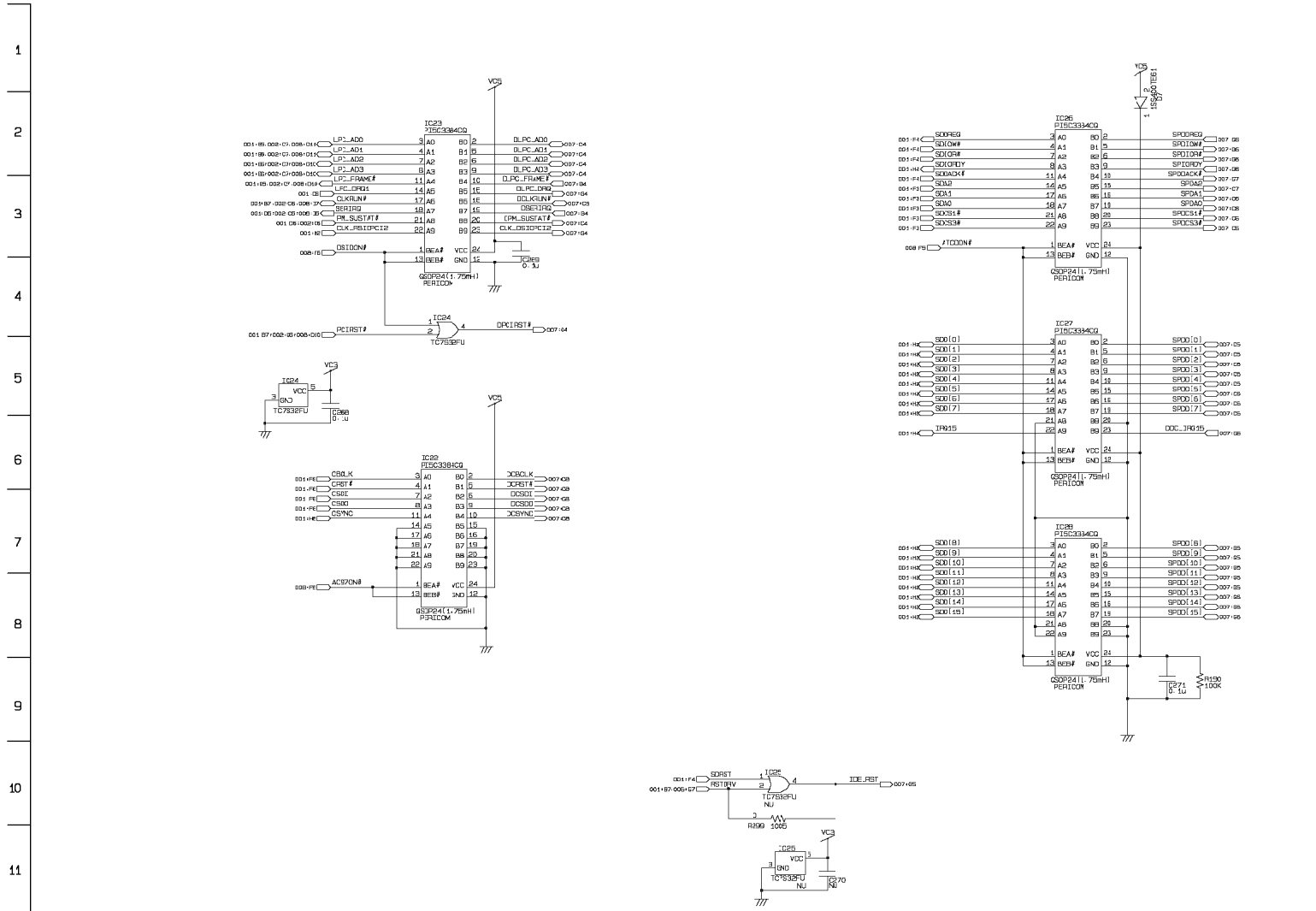


	RIM	SB300	WAVE	NONE
RFID0	0	0	1	-
RFID1	1	0	0	1
RFID2	*	*	*	*
VCC	4.5	3.3	3.6	0

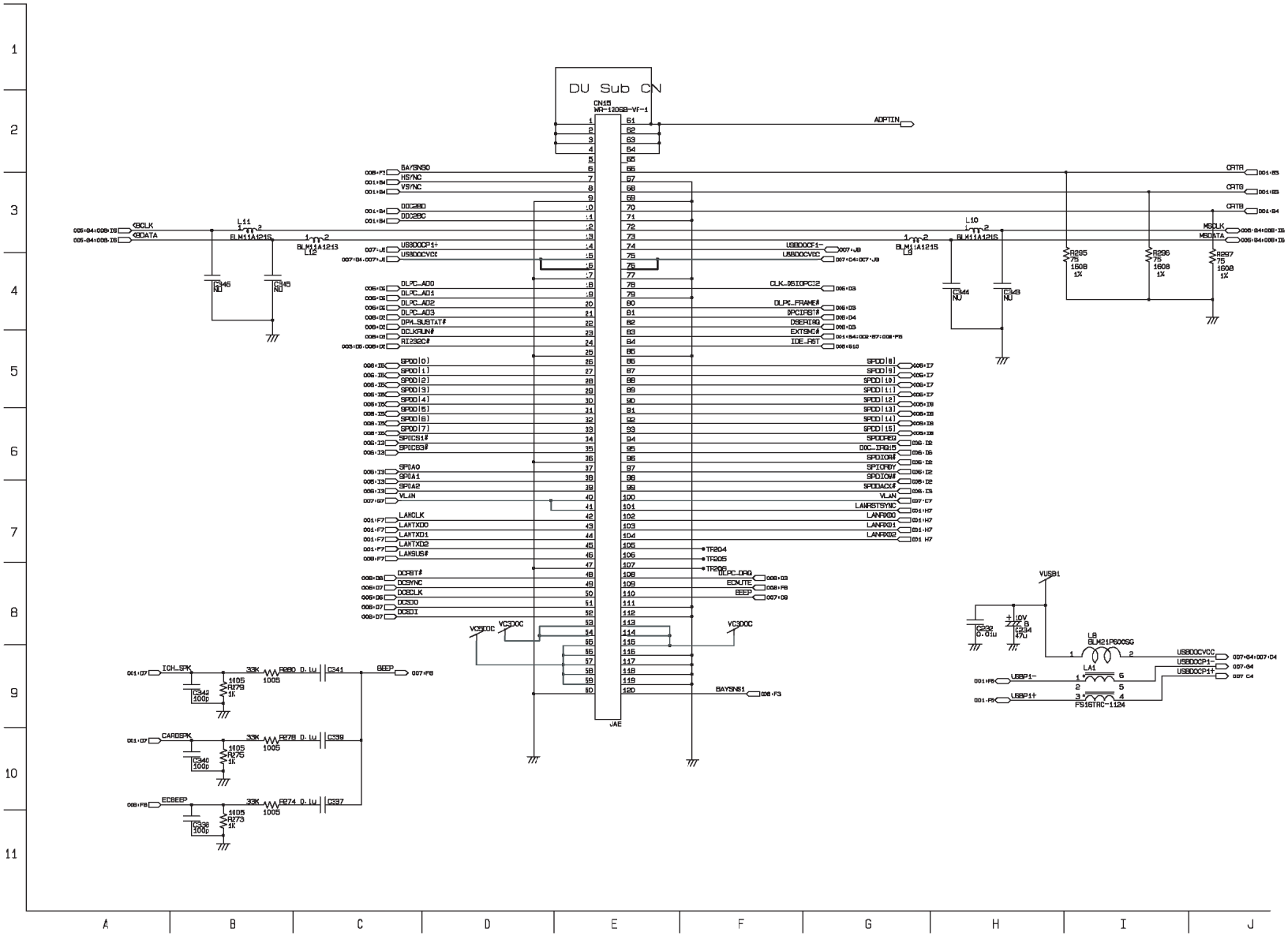
Lower Main 5 KBC



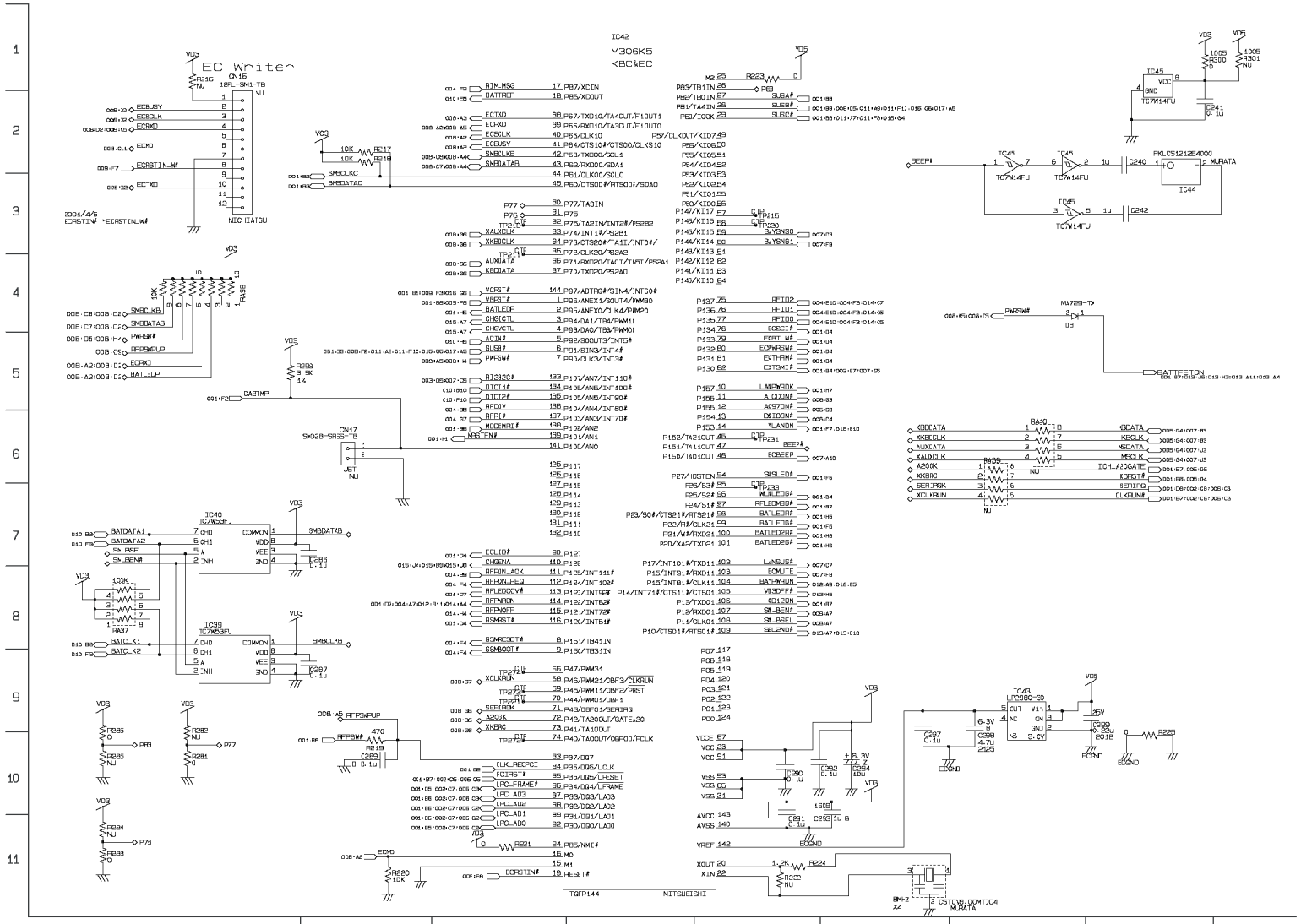
Lower Main 6 Q-AW for Doc



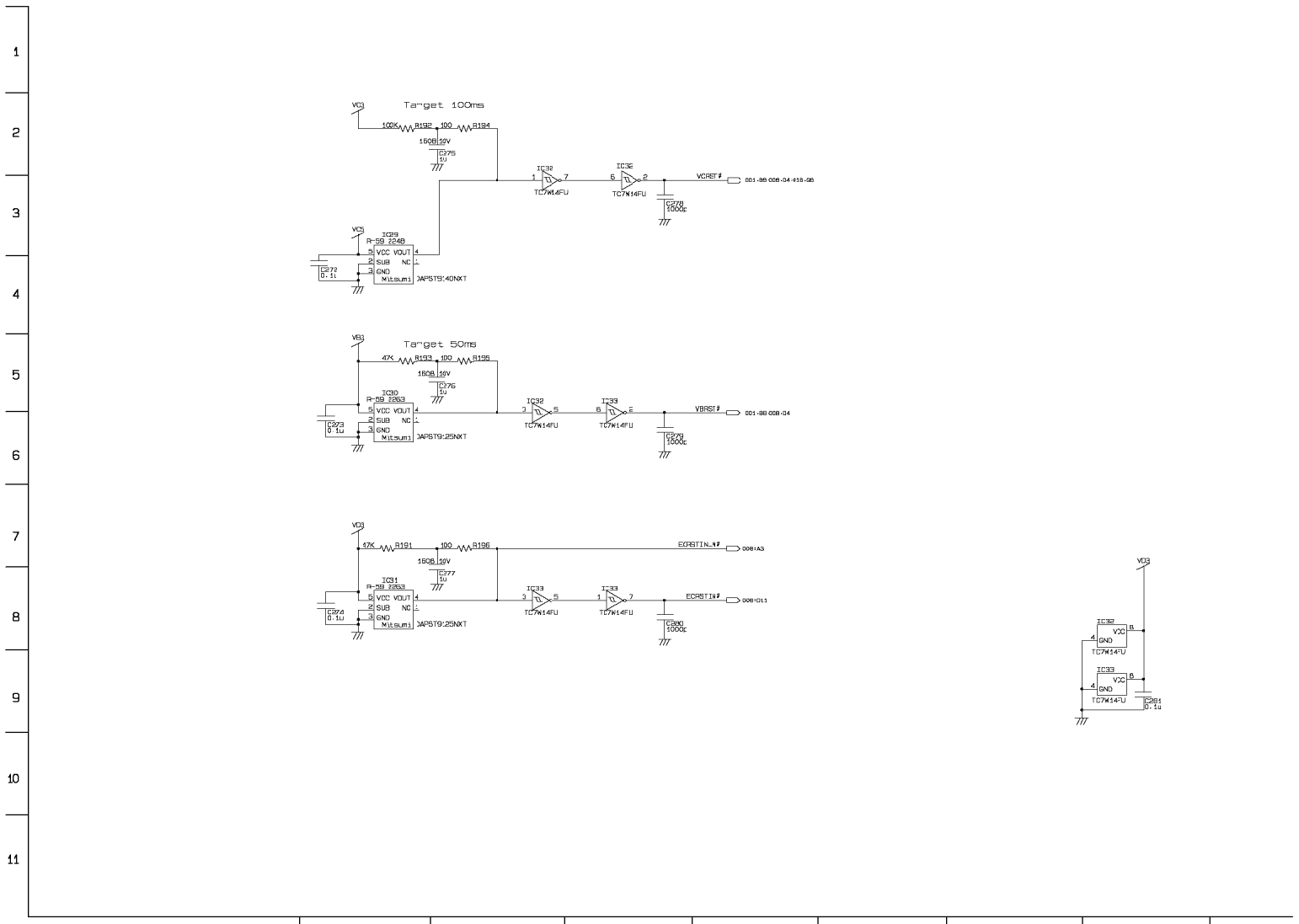
Lower Main 7 Doc Connector



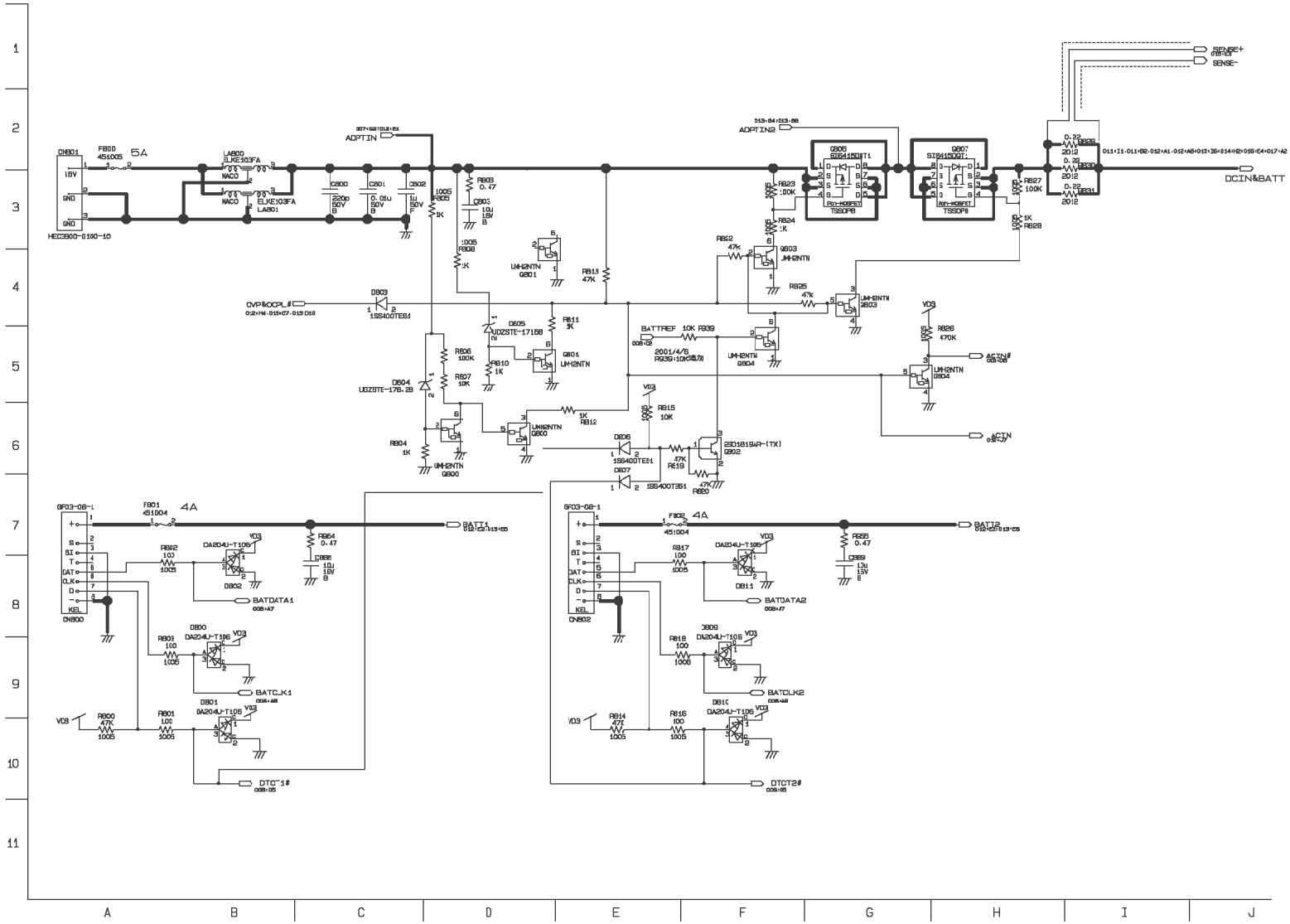
Lower Main 8 EC



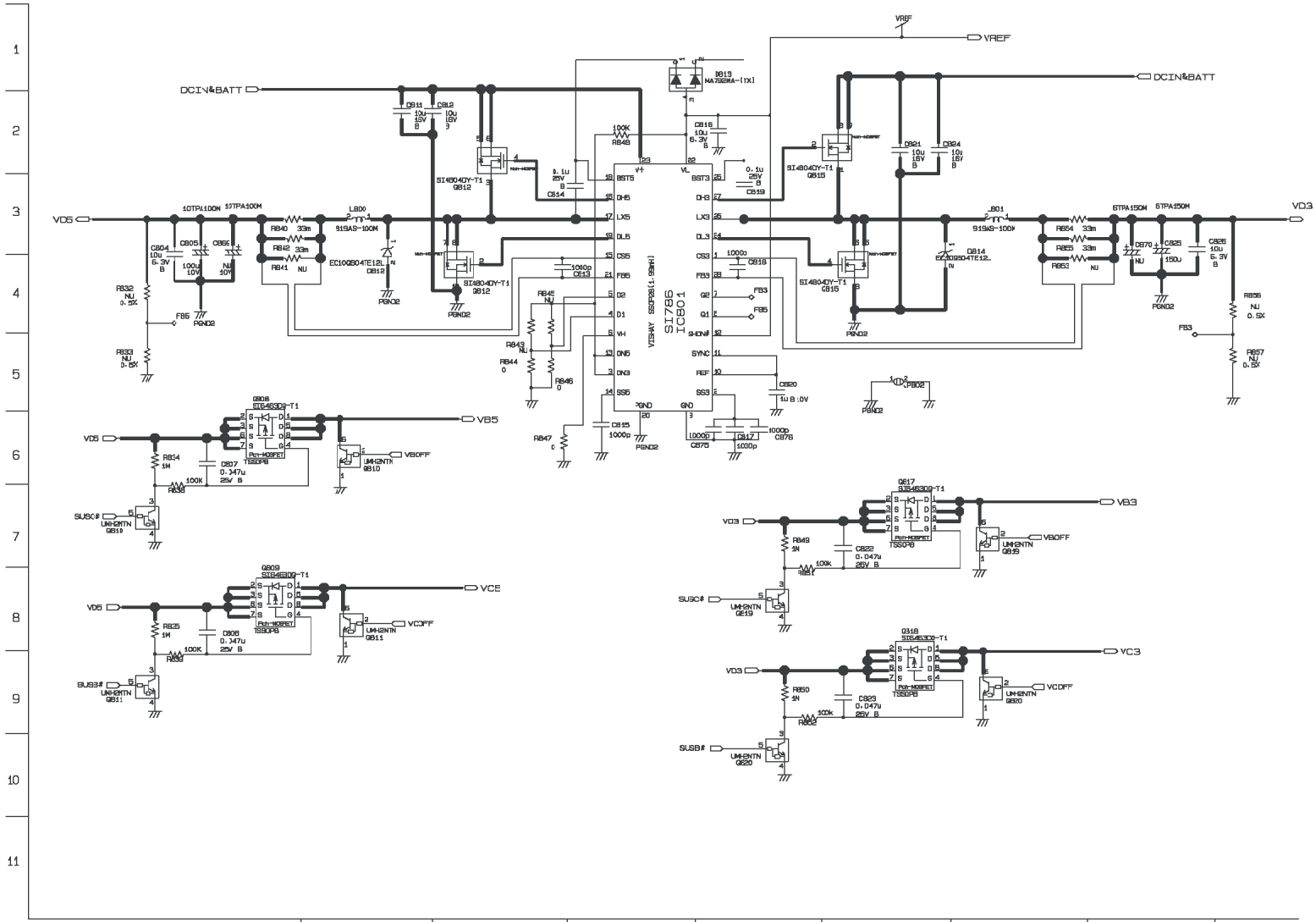
Lower Main 9 Reset



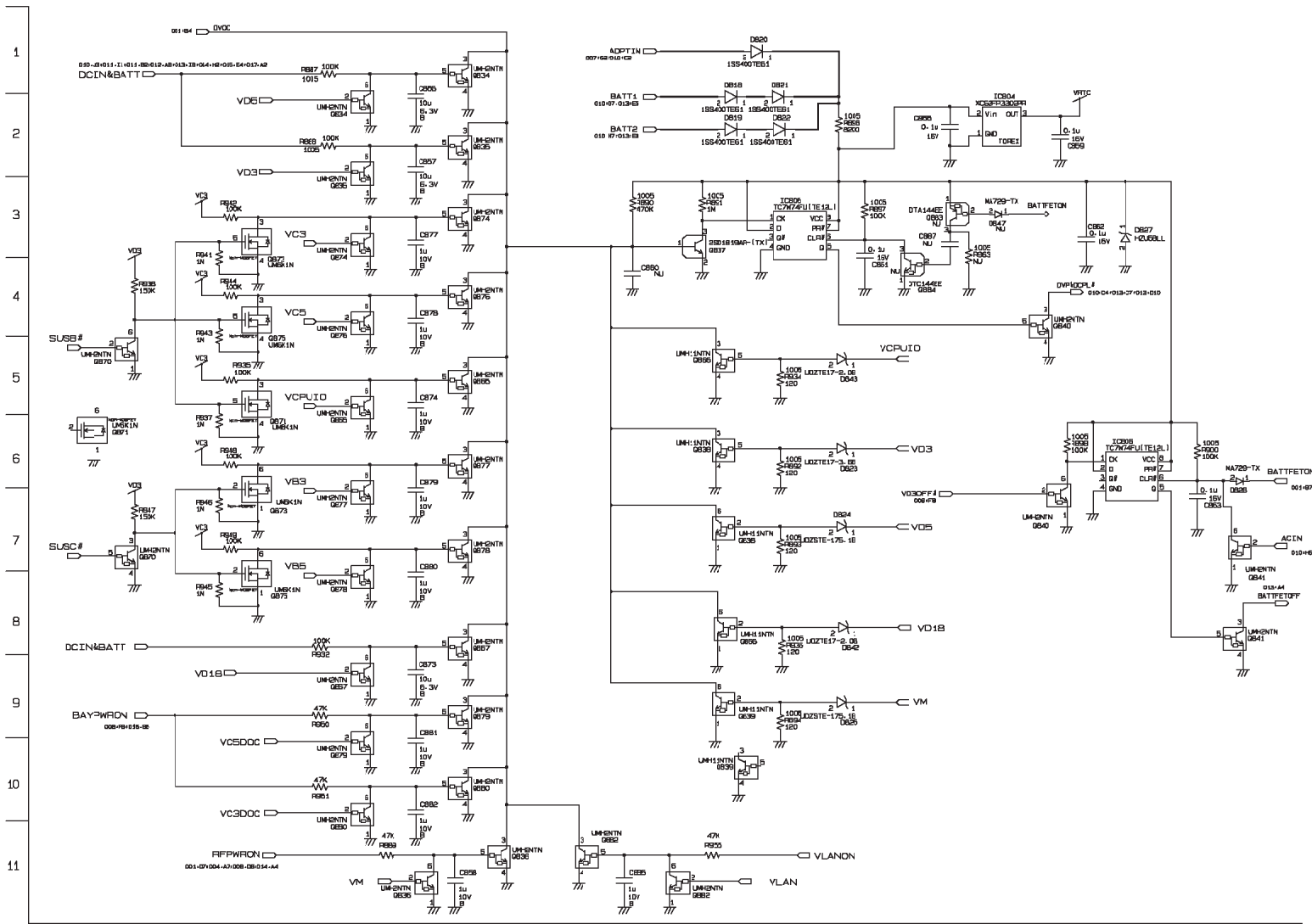
Lower Main 10 DC IN



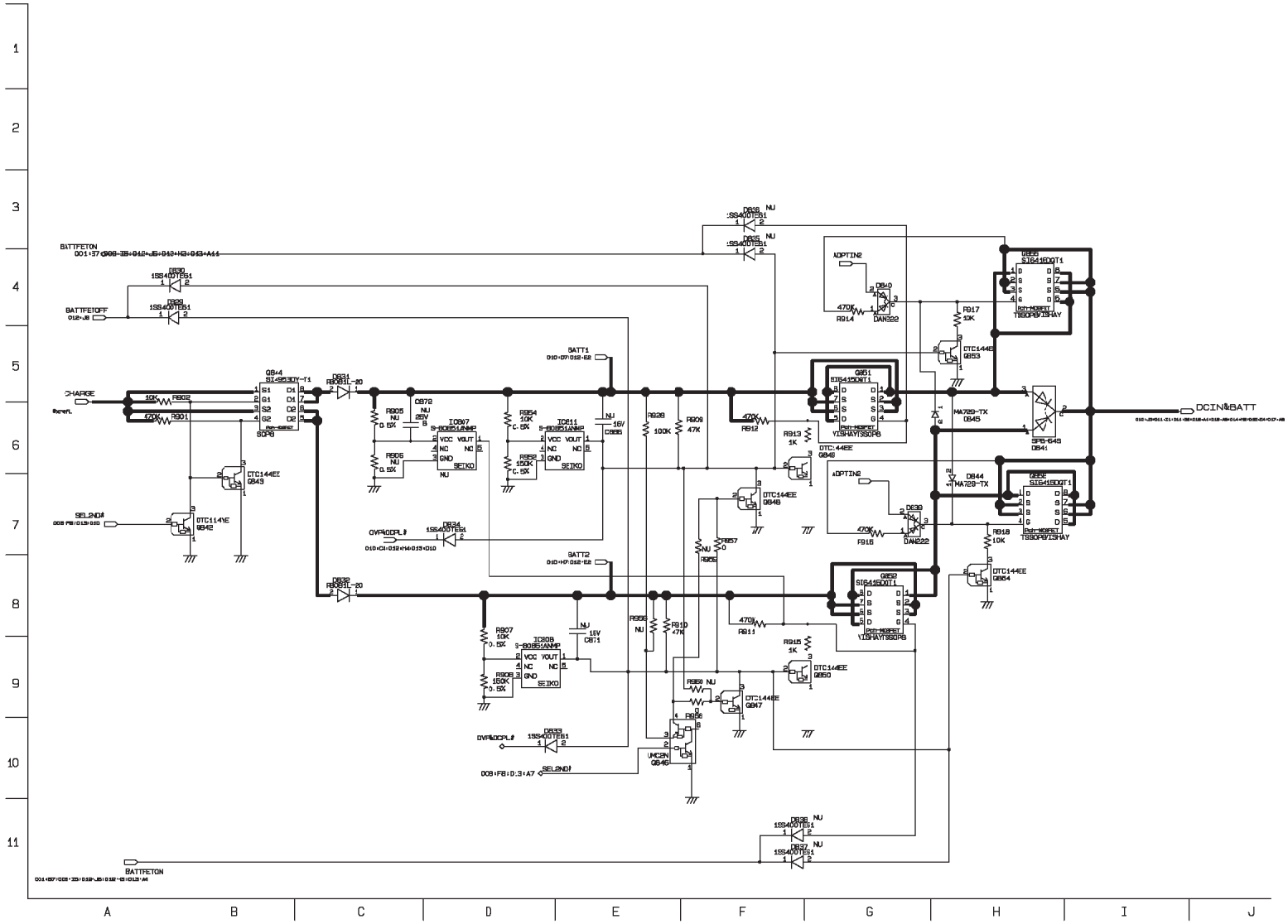
Lower Main 11 VD3 & VD5



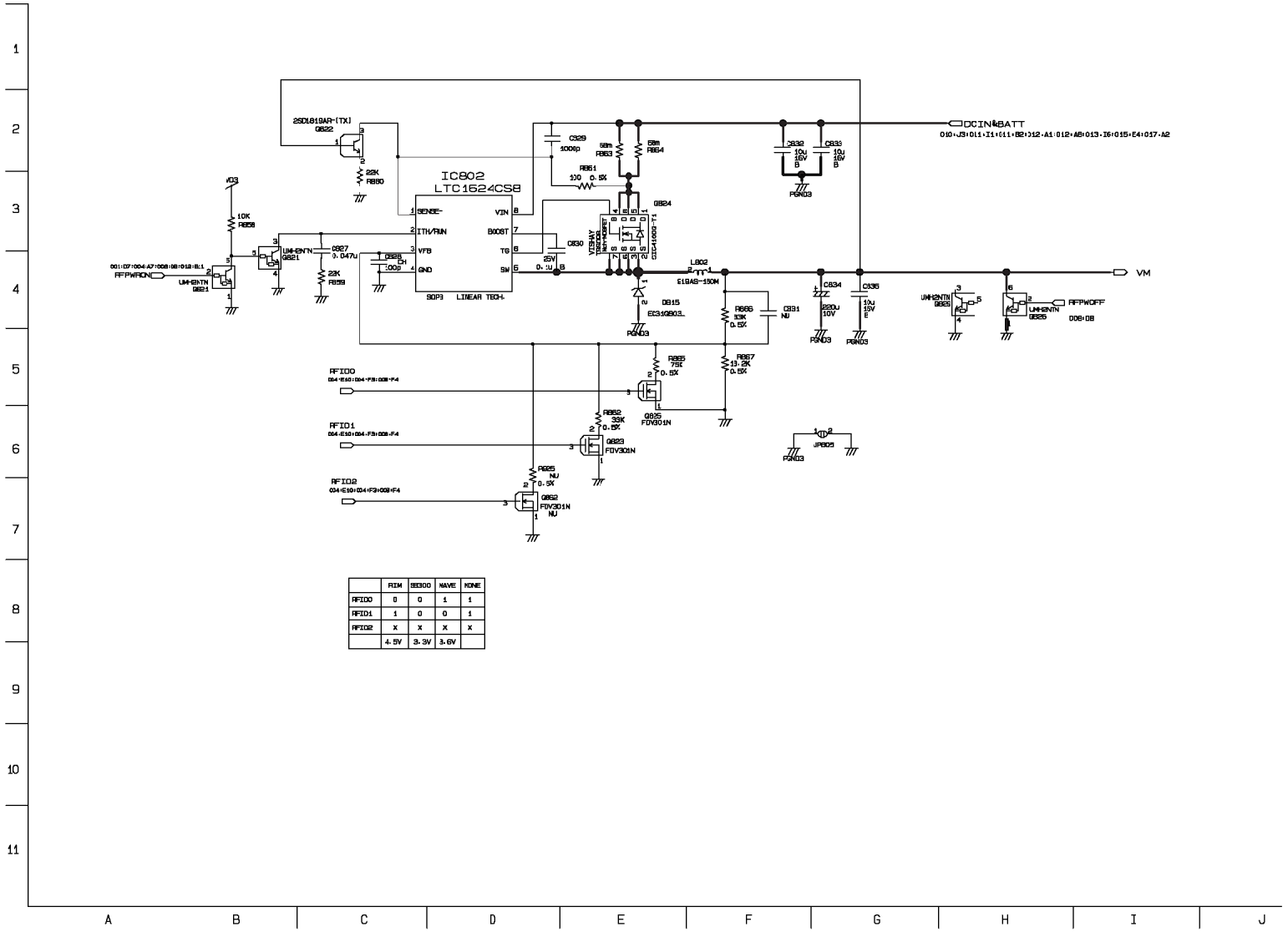
Lower Main 12 Power Circuit2



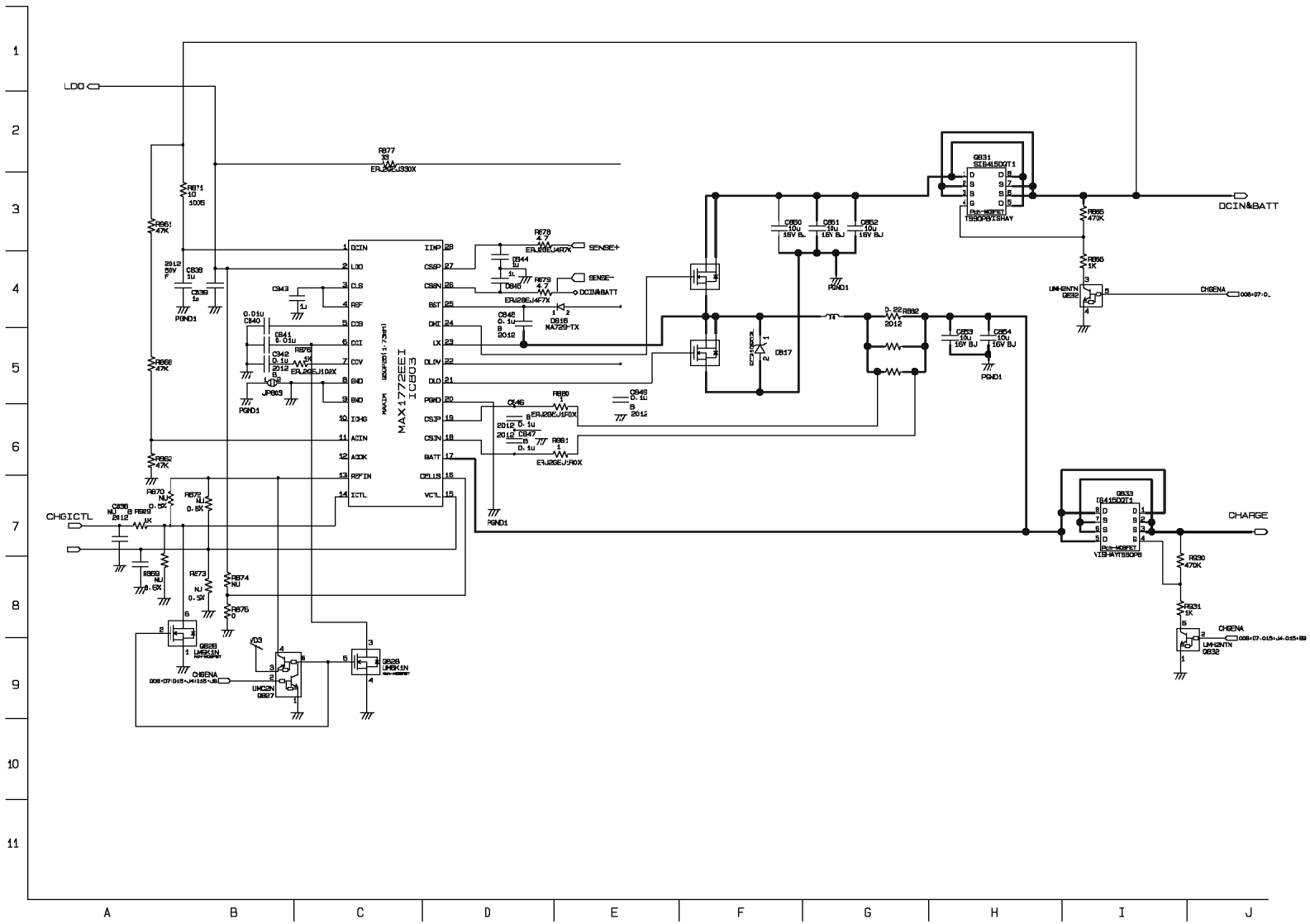
Lower Main 13 BATT SW



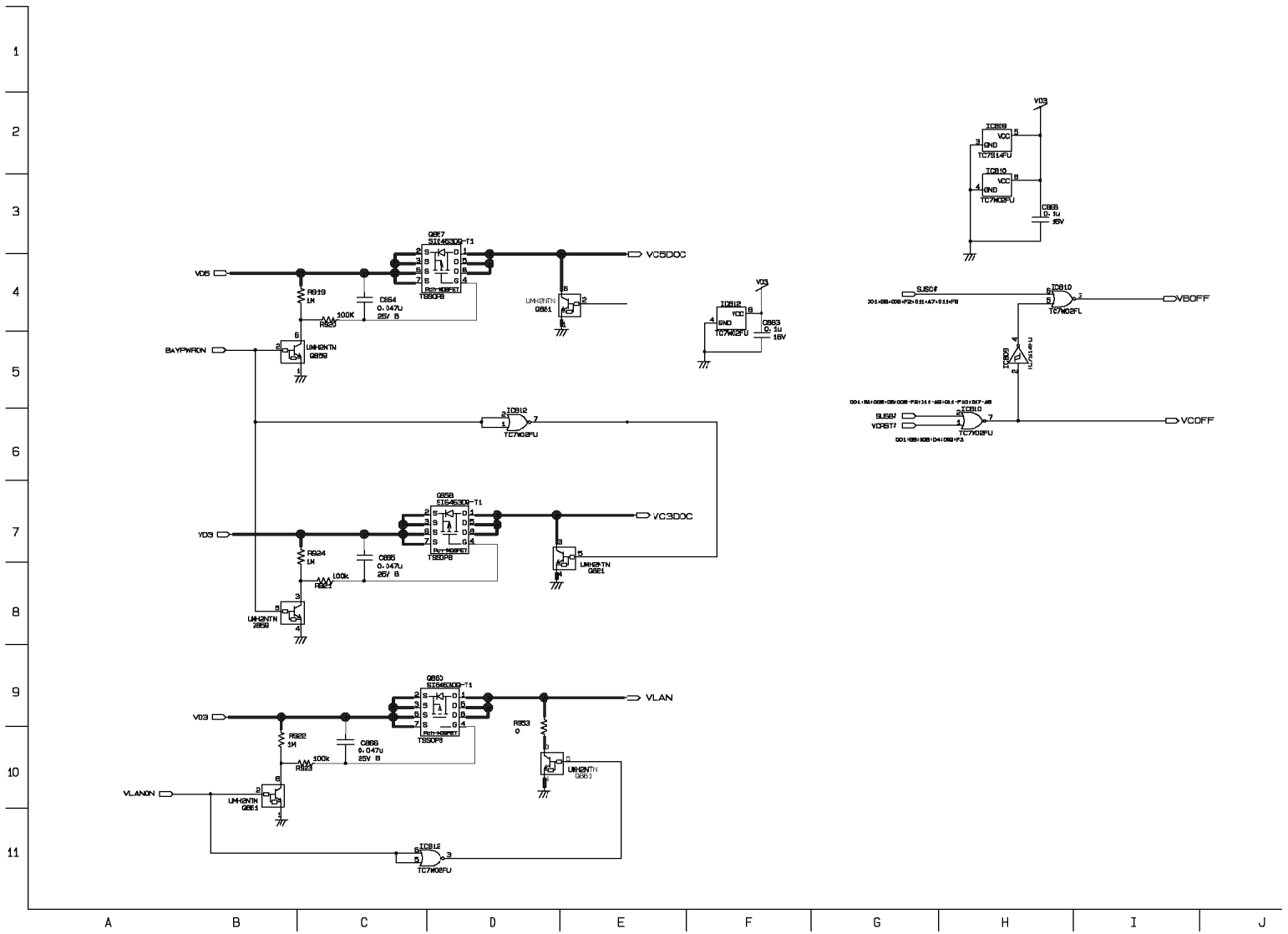
Lower Main 14 RF DC / DC



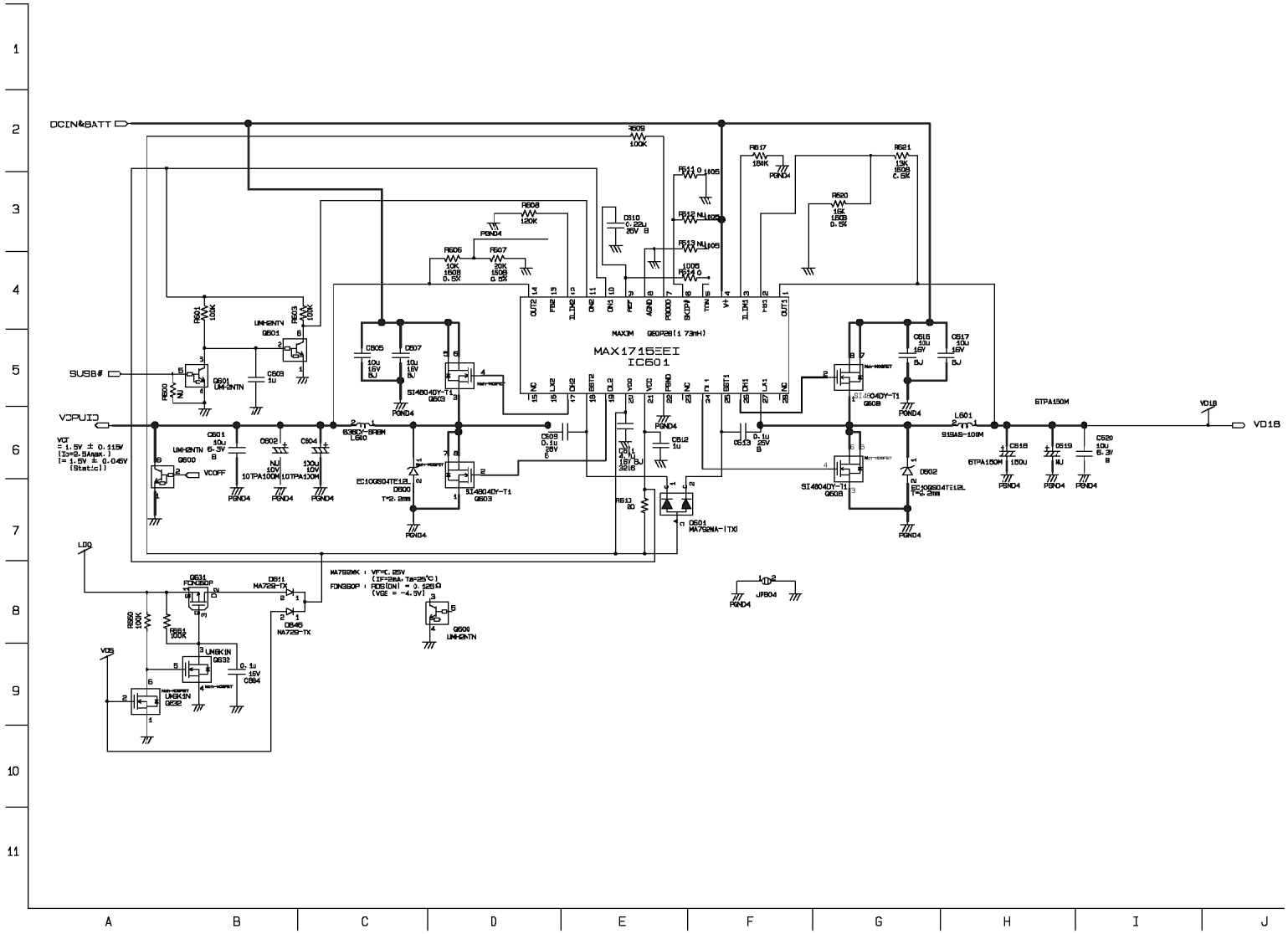
Lower Main 15 Charger



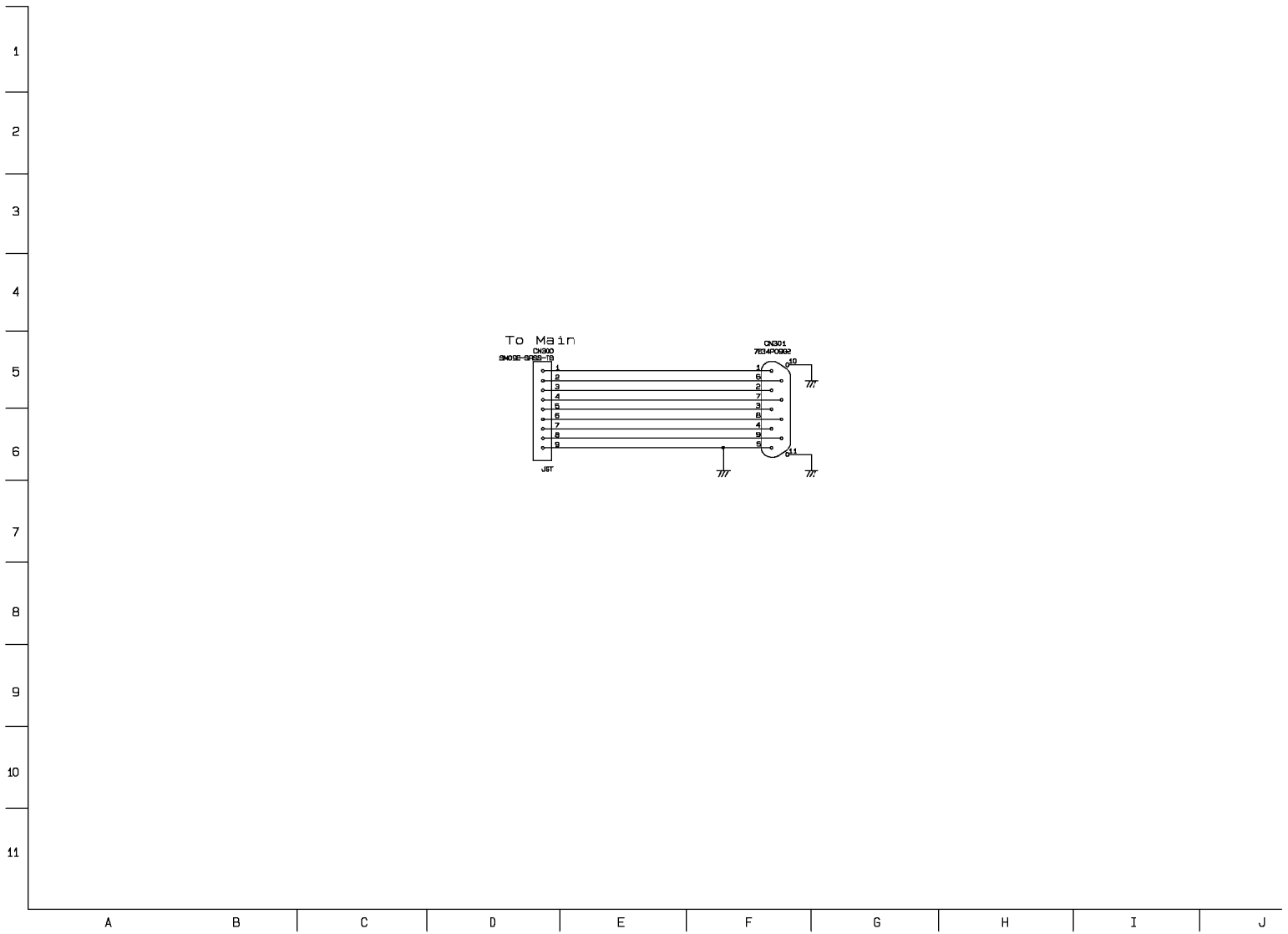
Lower Main 16 Doc Power



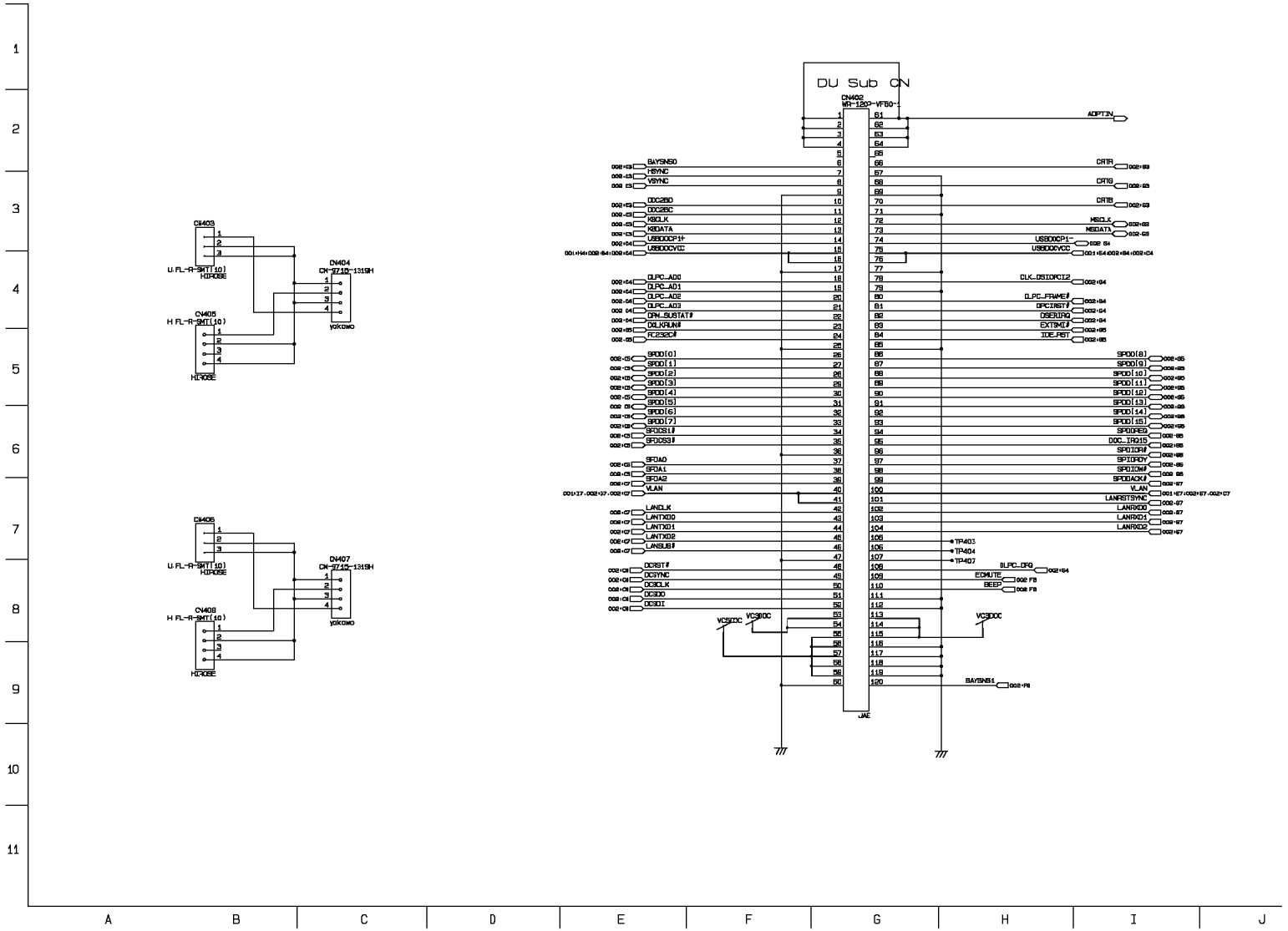
Lower Main 17 VD18



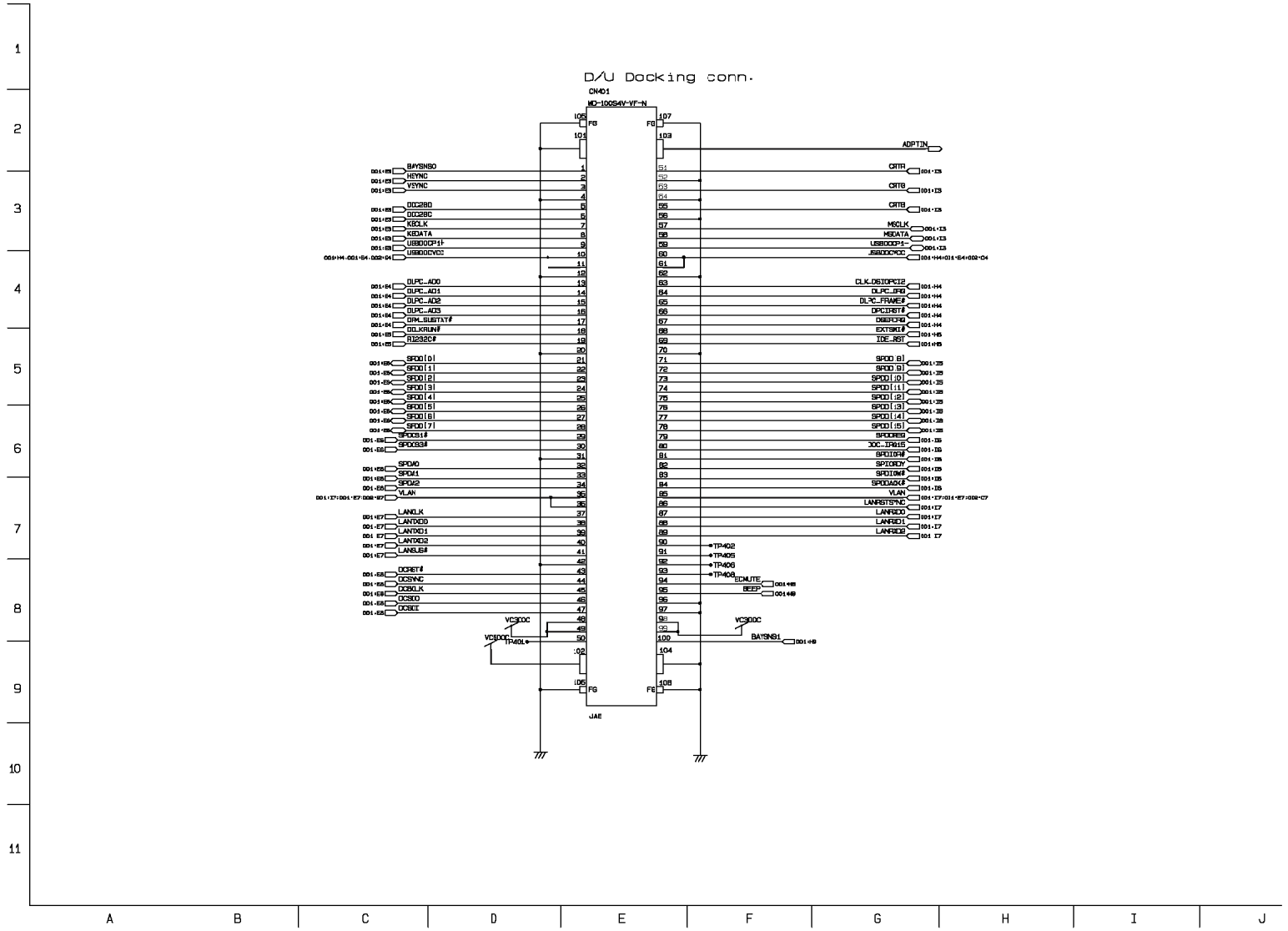
Serial Connector



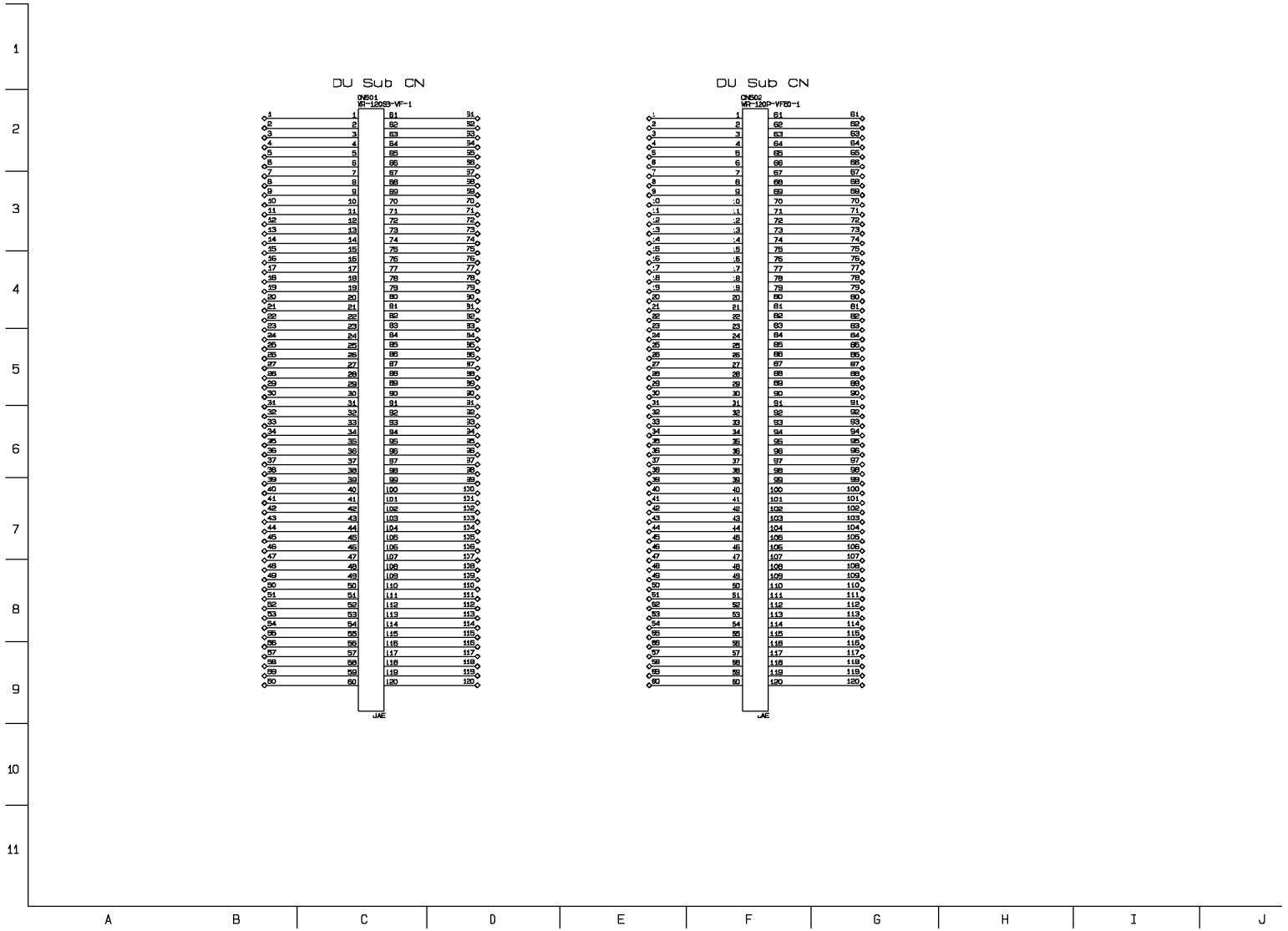
D/U Sub Connector



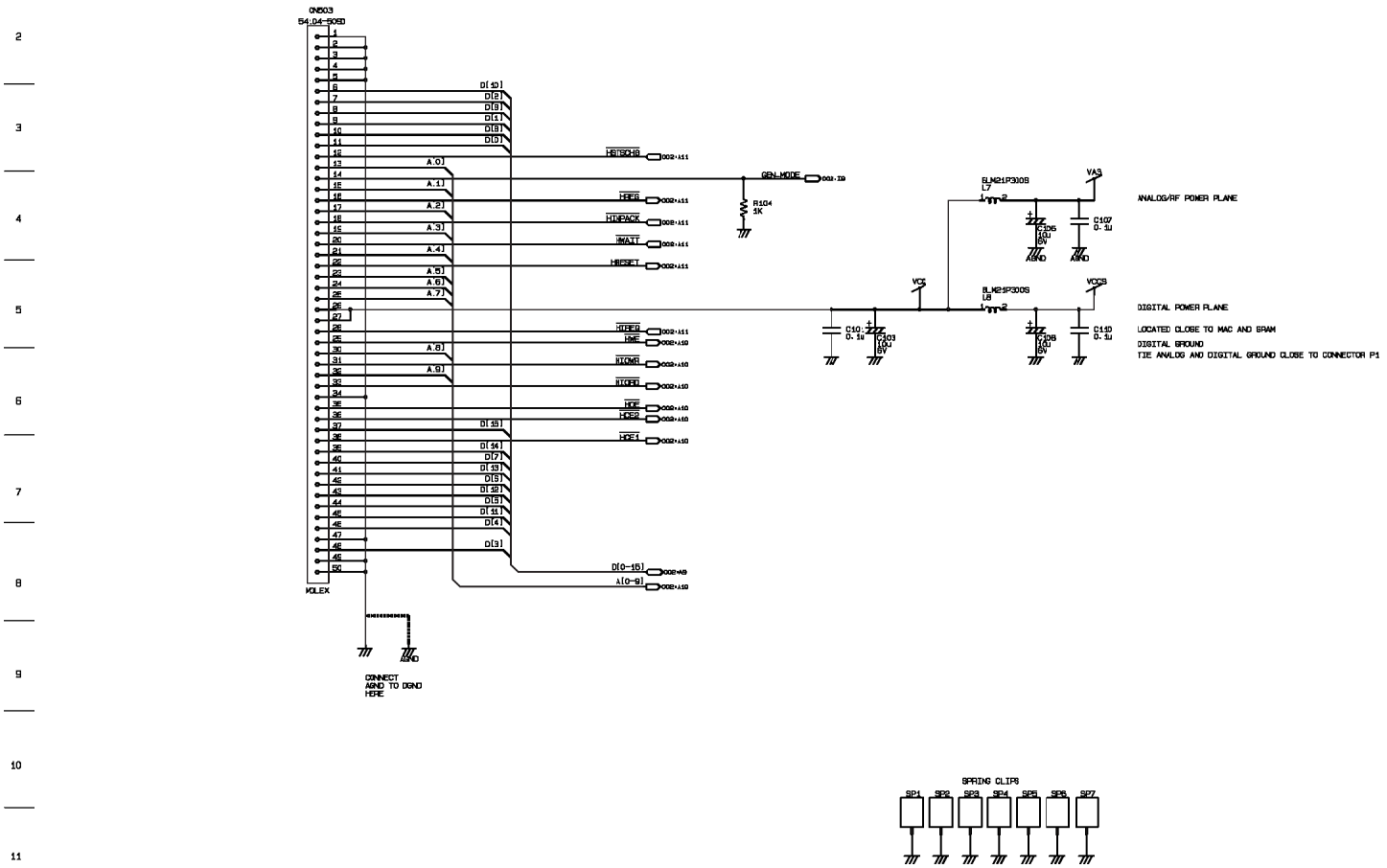
D/U Docking Connector



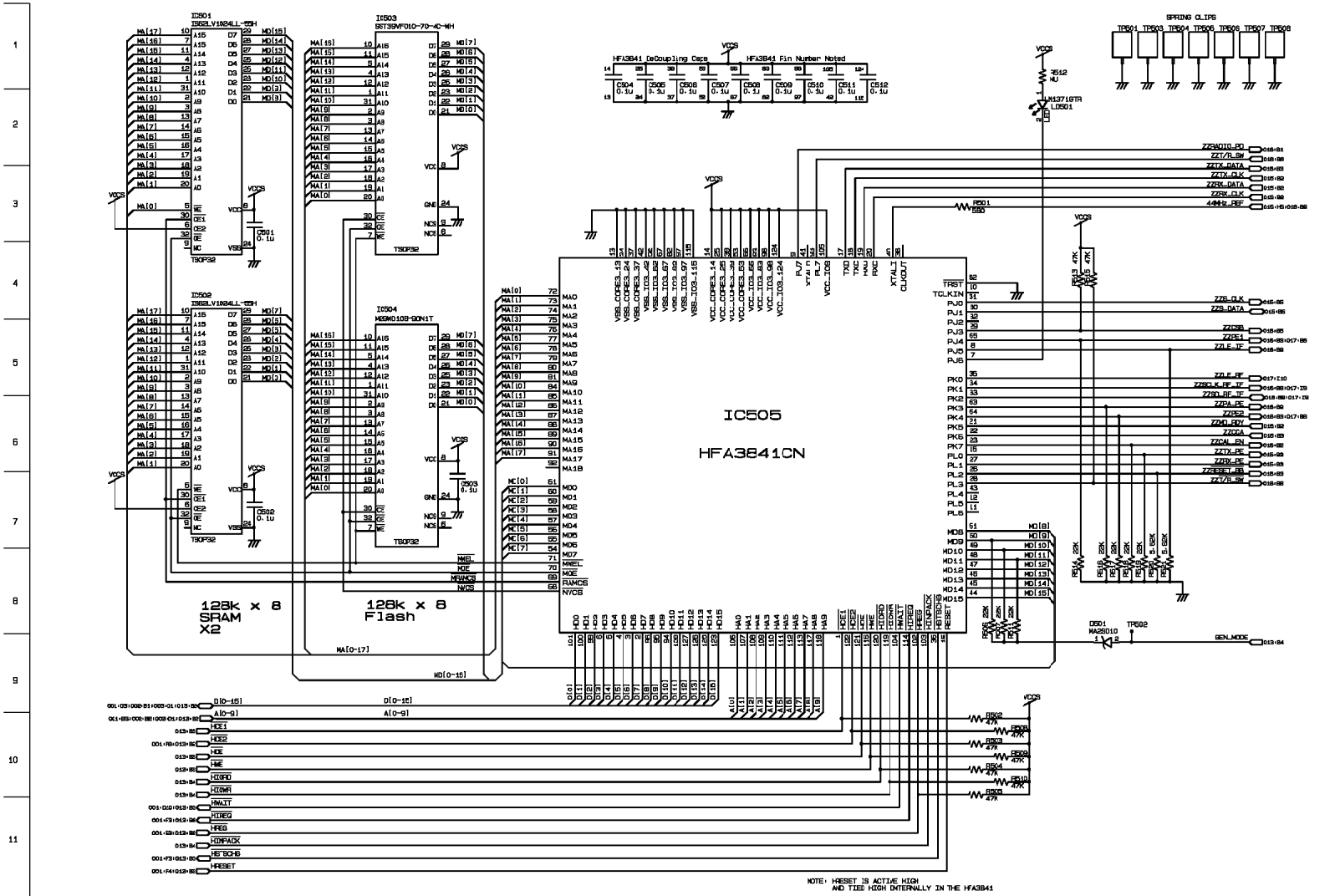
D/U Sub Connector



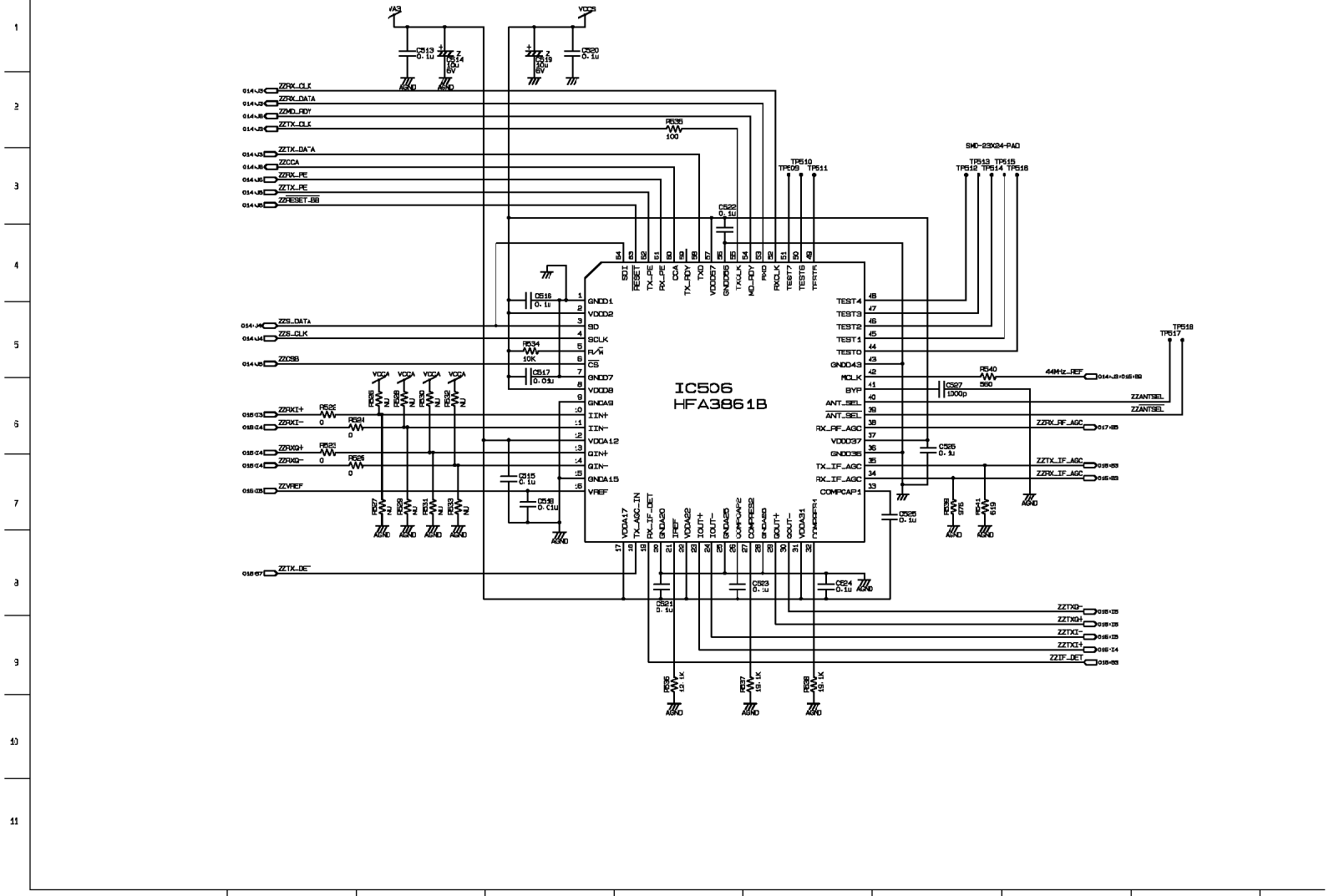
Wireless 1 PCMCIA - FFC/FPC Connector



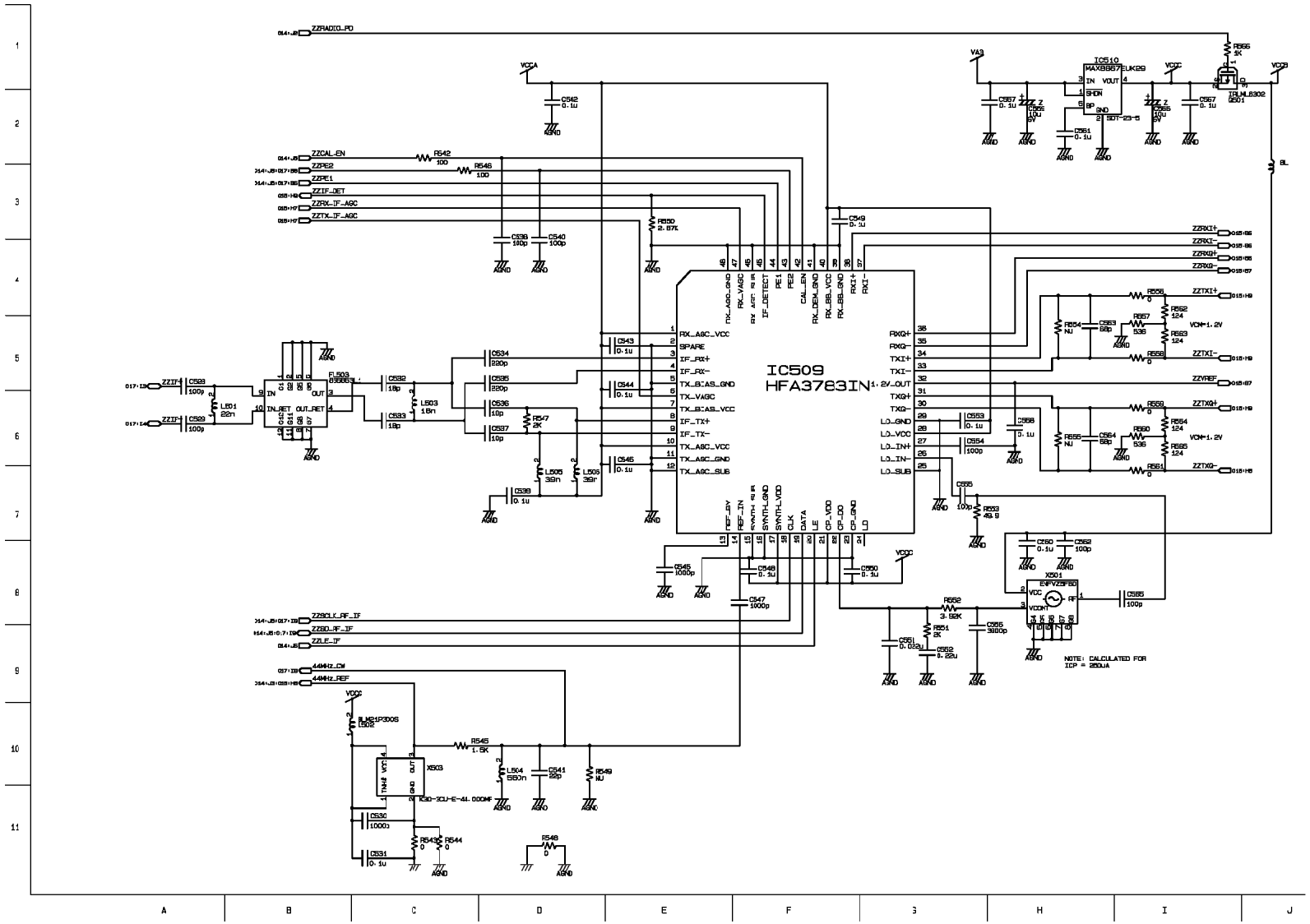
Wireless 2 MAC Controller, SRAM, Flash



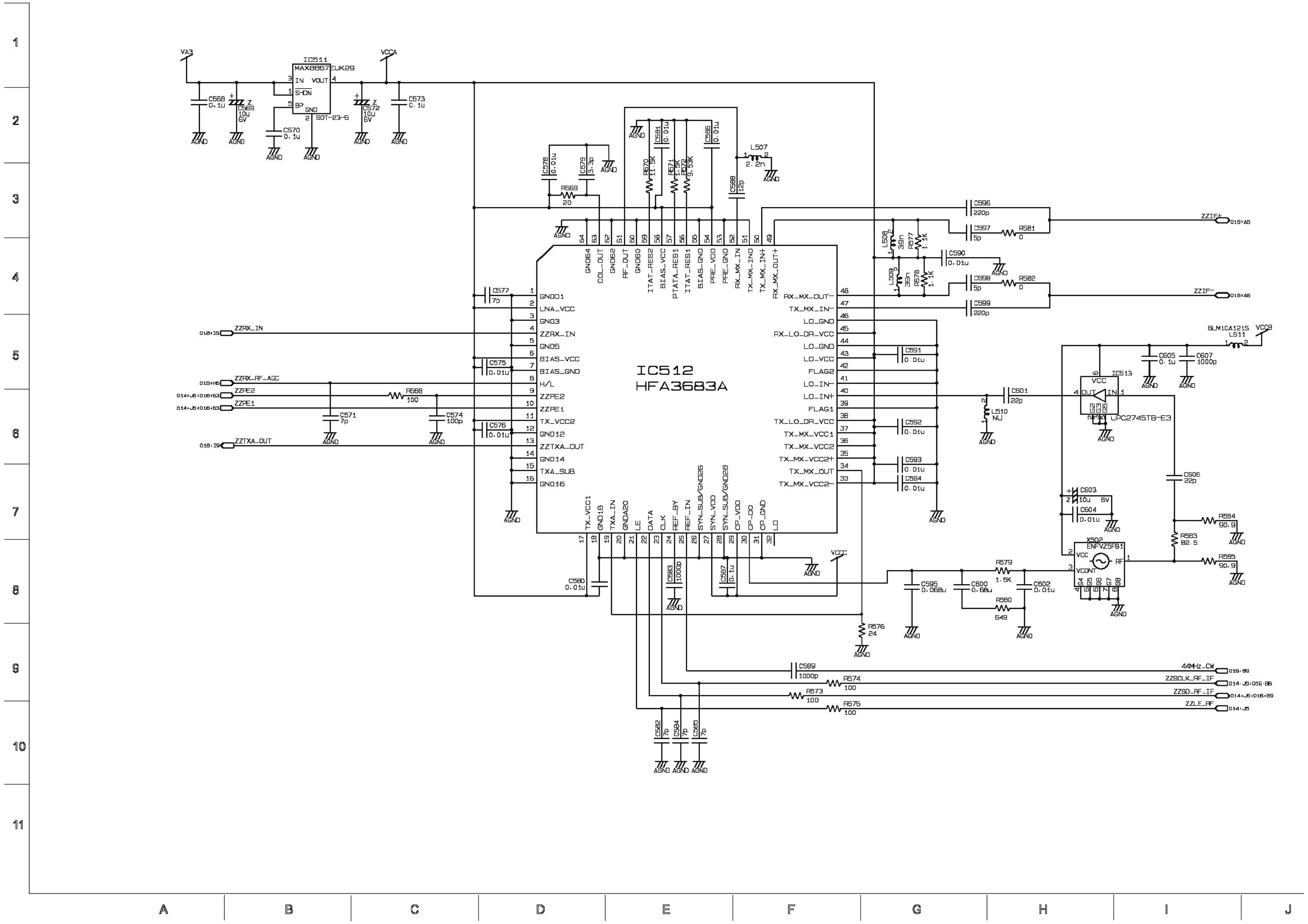
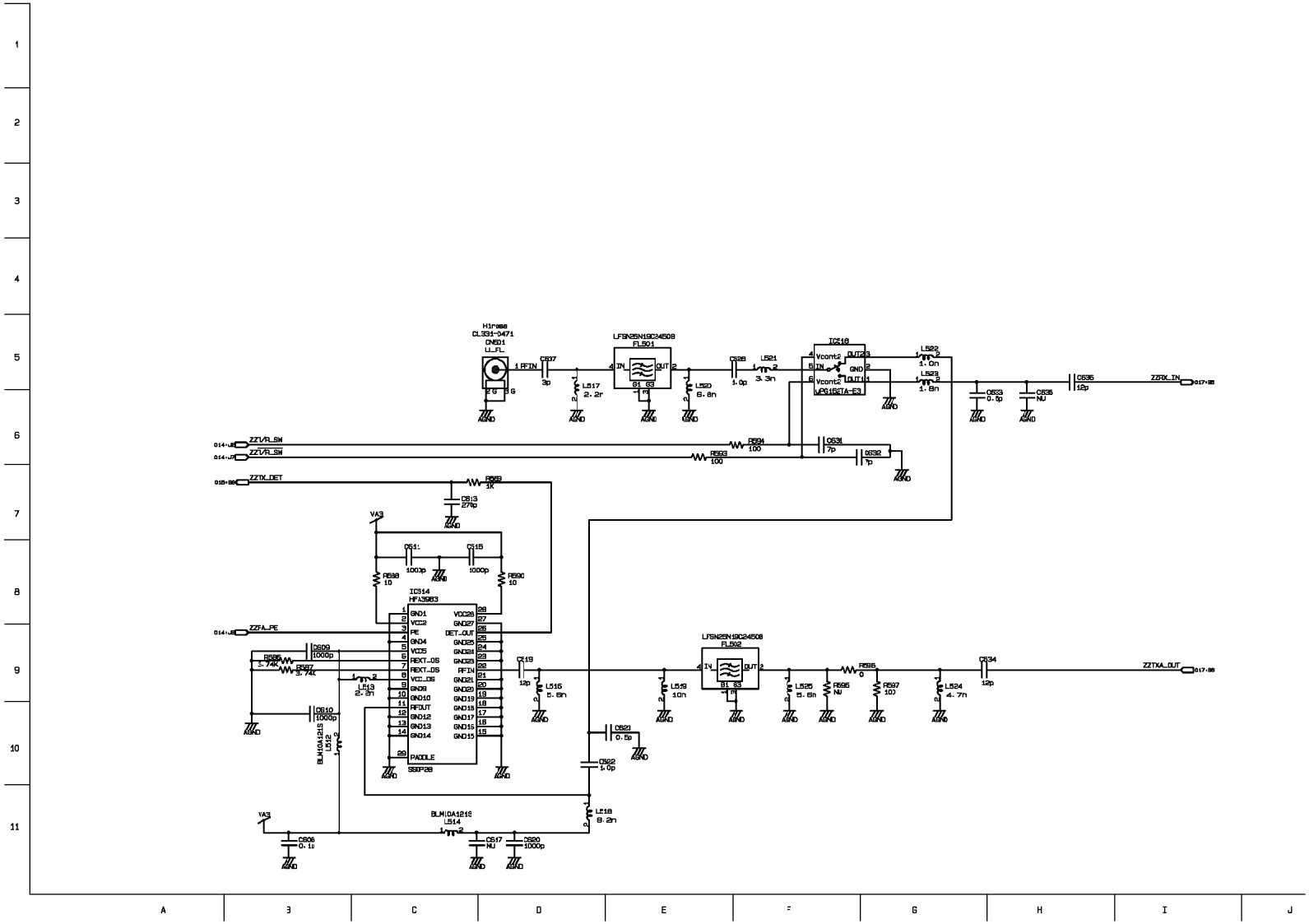
Wireless 3 Base Band Processor



Wireless 4 I/Q Modem, 2nd Lo



Wireless 5 RF/IF Mixer, 1st Lo



Wireless 6 Power Amp, Antenna